

Haida Gwaii

Local Health Area Profile

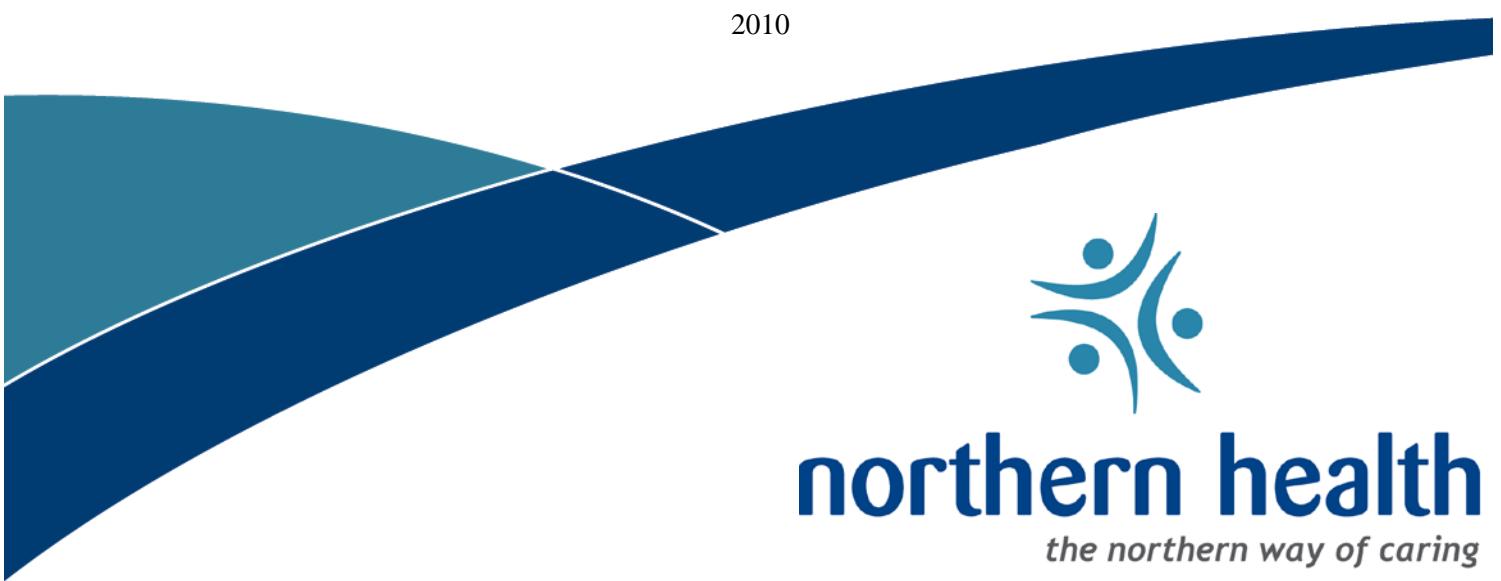
LHA 050

*Northwest
Health Service Delivery Area
2010*

Research and Production by

James Haggerstone

2010



Our Vision - a Picture of 2015

Northern Health leads the way in promoting health and providing health services for Northern and rural populations

- Northern Health is known for our strong primary health care system. People experience seamless and coordinated service. The 'Primary Care Home' is the foundation for multidisciplinary health care and helps people navigate across services.
- Northern Health involves people and their families in their own health and health care. Individuals and families feel respected and are treated compassionately.
- Northern Health provides high quality health services, using evidence and innovation, to meet the needs of our Northern and rural populations. We are known for the creativity of our staff and physicians and for our innovative use of technology to care for people as close to home as possible.
- Northern Health is recognized as an outstanding place to work, learn, and grow. We foster a safe and healthy work environment. Education and development of people in the north, for the north, attracts and retains staff and physicians.
- Northern Health works with communities and organizations to support Northern people to live well and prevent injury and illness. The health status of Northern people is improving faster than the rest of BC.

Our Mission

Through the efforts of dedicated staff and physicians, in partnership with communities and organizations, we provide exceptional health services for Northerners.

Acknowledgements

We have relied substantially upon the goodwill and expertise of our many partners. These collaborations reflect our northern way of caring and the aspirations that we share for a healthy and prosperous British Columbia. We would like to thank:

BC Cancer Agency, Dr. Andy Coldman and Colleen McGahan for providing the expertise behind the cancer incidence and prevalence statistics in this report.

BC Centre for Disease Control, a longtime partner for helping to provide updated Hepatitis C and the sexually transmitted infection (STI) figures in this report.

BC Coroners Service, another longtime partner, for helping us to describe work place fatalities and the role that substance use plays in fatal motor vehicle crashes.

BC Injury Research and Prevention Unit, for having the foresight to create the on-line data tool so that we could present injury, hospitalization and cost data in this report.

BC Ministry of Health Services, especially Michael Chang, Darcy Eyres, Tony Wang and Ming Guo for helping us leverage our data towards a more sustainable health system.

BC Stats, whose staff routinely go above and beyond to assist us. A large proportion of the material in this document is the fruit of their labor. We are very grateful.

BC Vital Statistics, for always supporting us with data, and providing the explanations behind the numbers. Once again, we have solid health status and mortality data.

Center for Addictions Research in BC: Alcohol and Other Drug Monitoring Project for illuminating the impact of alcohol and other drugs in the lives of northerners.

Human Early Learning Project (HELP), Dr. Clyde Hertzman, for allowing us to summarize on one page, a particularly important and extensive body of work.

Insurance Corporation of British Columbia, a long time Road-Health partner, for providing the motor-vehicle roadside suspension data, contained in this report.

Perinatal Health Program: Alberta Health Services, for helping us to track and better understand the needs of people who travel to Alberta for services.

Perinatal Services BC: PHSA, especially Cathe Johnson, for being a champion of our pursuit of statistics to inform excellence in rural maternal and infant health.

Lastly, but not least in any way, the numerous people and business areas in Northern Health who permitted us to include their work in this document.

Thank you, for working with us.

Here is what you will find inside...

Part 1 - Demographics

In this section we explore some of the underlying mechanics of population change in the north: population age-structure, births, deaths, fertility and migration, and how these pieces feed into our understanding of the northern BC population.

We also want to acknowledge that there are limitations in the available information. For example, with the large number of resource sector jobs, there can be very rapid in and out migrations of people who reside in industry housing such as man-camps. These population shifts can have a real impact, especially in the smaller communities. This mobile working population often maintains a permanent residence elsewhere. This can make it difficult to anticipate and plan for these ebbs and flows in the population.

Part 2 - Determinants of Health

We know that many things determine the wellbeing and prosperity of people and communities in northern BC. Living conditions, income, employment, education, sex (gender), housing, food, the environment, choices and behaviors around lifestyle and access to integrated health services, are just a few of these influences.^{1, 2}

We have collaborated with numerous agencies to bring this type of information into view. It is exciting to bring data and expertise from our partners into this document.

Part 3 - Health Status

We attempt to answer the question: "How healthy are we?"

Part 4 - Promoting Health and Providing exceptional Health Services

Besides including a brief overview of some of the many areas dedicated to promoting health and to keeping us disease and injury free, we also introduce some of the more common and confusing health industry jargon. We think this will be helpful when looking at the facility profiles contained later in this document.

Part 5 - Appendices and References

We don't want to be the only ones with access to this type of information. We want you to be able find it on your own. We also want to explicitly acknowledge the many people and agencies that have made their data and expertise available to us.

For More Information

Please visit the Community Health Information Portal: <http://chip.northernhealth.ca>

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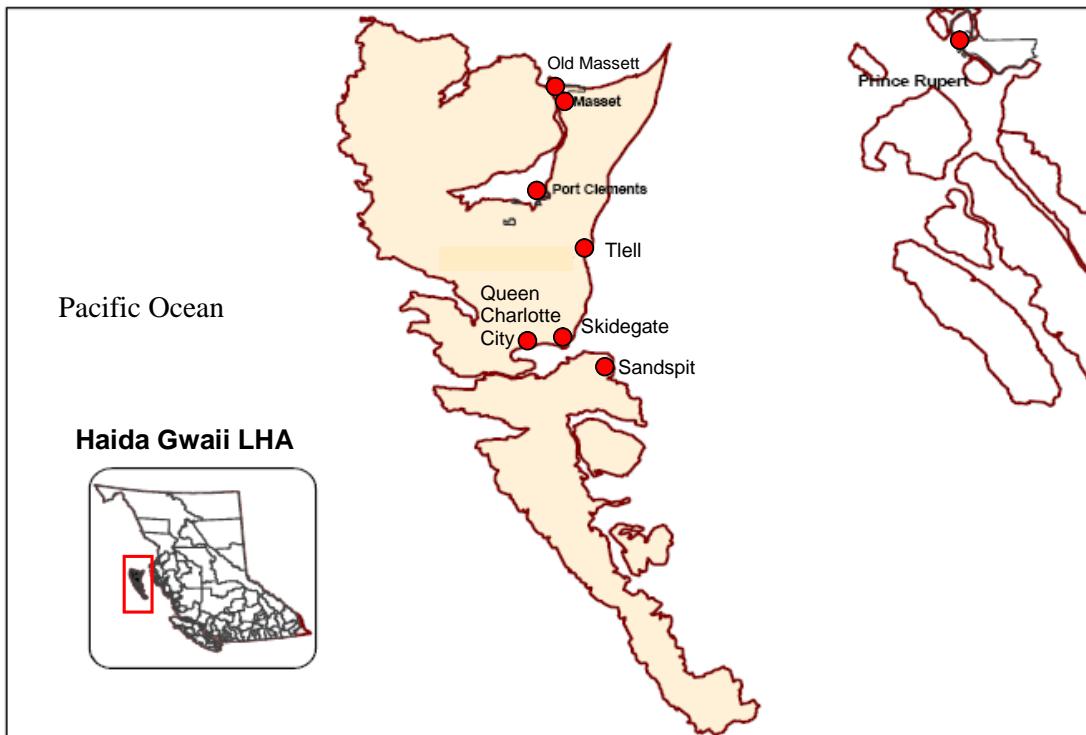
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- Map and Tables: First Nations Languages in northern BC
- Northern Facility Activity Summaries

Demographics



Haida Gwaii Local Health Area Overview



Map Credit: Adapted from BC Stats. Regional Socio-economic Profiles and Indexes, 2009.³

The Haida Gwaii Local Health Area (LHA 050) is located in Northwest BC. It covers approximately 10, 419 square kilometers and is home to approximately 4,665 people.⁴

Forestry, tourism and the public sector are important and account for a large percentage of local employment. The Naikun wind farm project is proposed for the shallow waters on the northeast coast of the islands in the Hecate straight.

This is the traditional territories of the Haida peoples. Today, the Haida make up at least 40 percent of the local island population. The predominantly Haida Villages of Old Massett and Skidegate are home to over 1600 people.^{5 6 7}

Additional Resources

BC Stats: BC Regional Socio-economic Profiles and Indices
<http://www.bcstats.gov.bc.ca/data/sep/index.asp>

For links to community, municipal and regional websites and official community plans, please visit the Community Health Information Portal <http://chip.northernhealth.ca>

Population of Local Health Areas and Communities

Local Health Areas ⁸	Population in this Local Health Area (LHA)	This population as % of Northwest population	This population as % of Northern BC population
LHA 050 – Haida Gwaii	4,665	6.2 %	1.7 %
LHA 051 - Snow Country	490	0.7 %	0.2 %
LHA 052 - Prince Rupert	14,258	19 %	5.0 %
LHA 053 - Upper Skeena	5,435	7.2 %	1.9 %
LHA 088 -Terrace	20,213	26.8 %	7.1 %
LHA 080 - Kitimat	10,263	13.6 %	3.6 %
LHA 054 - Smithers	16,074	21.3 %	5.6 %
LHA 092 - Nisga'a	1,977	2.6 %	0.7 %
LHA 087 - Stikine	1,064	1.4 %	0.4 %
LHA 094 -Telegraph	705	0.9 %	0.2 %
Total Northwest HSDA	75,144	100 %	26.2 %

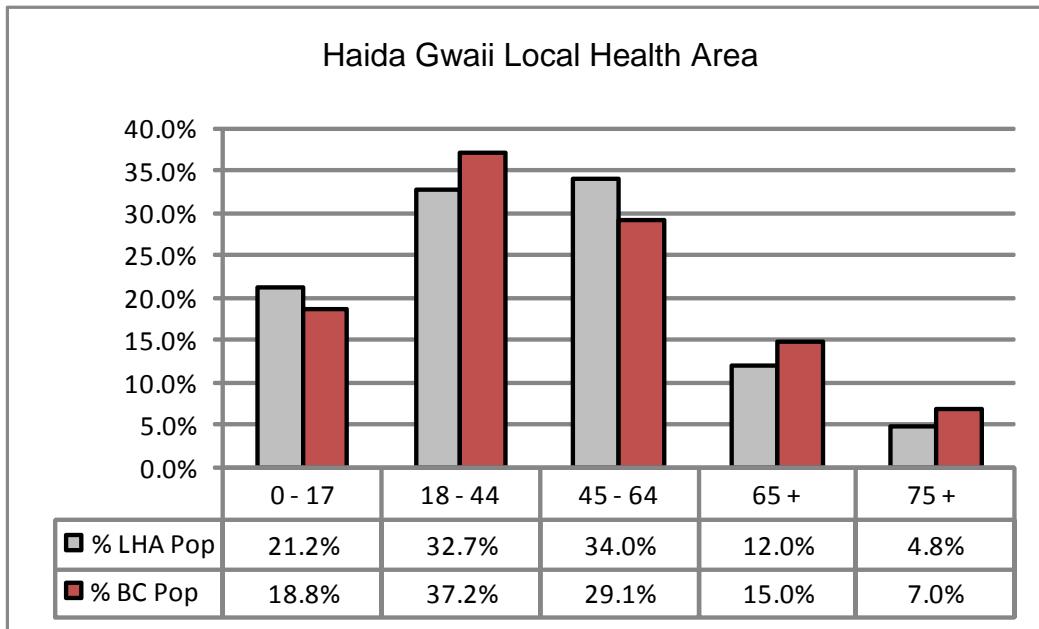
Communities	Persons	LHA ⁹	Ref.	Communities	Persons	LHA	Ref.
Atlin	400	087	10	Kitsumkalum	204	088	11
Dease Lake (U)	384	087	12	Lax Galts'ap	544	092	13
Gitga'at / Hartley Bay	151	080	14	Lax kw'alaams	760	052	15
Gingolx / Kincolith	383	092	16	Masset (VL)	929	050	17
Gitanmaax	715	053	18	Massett No. 1	685	050	19
Gitanyow	370	088	20	Metlakatla	96	052	21
Gitlakdamiks / New Aiyansh	845	092	22	MoriceTown /Kyah wiget	636	053	23
Gitsegukla	440	053	24	Port Edward (DM)	570	052	25
Gitwangak / Kitwanga	405	088	26	Prince Rupert (C)	12,846	052	27
Gitwinksihlkw / Canyon City	183	092	28	Queen Charlotte (VL)	948	050	29
Gitxaala / Kitkatla	383	080	30	Sandspit (U)	387	050	31
Glen Vowell / Sik E Dakh	161	053	32	Skidegate	699	050	33
Good Hope Lake	32	087	34	Smithers (Town)	5,321	054	35
Hagwilget / Tse-kya	183	053	36	Stewart (DM)	444	051	37
Hazelton (DM)	604	053	38	Tahltan /Telegraph Cr.	284	094	39
New Hazelton (VL)	309	053	40	Taku River Tlingit	81	087	41
Houston (DM)	2,958	054	42	Telkwa (VL)	1,357	054	43
Iskut	335	094	44	Terrace (C)	11,675	088	45
Kispiox / Anspayaxw	639	053	46	Tl'ell (U)	187	050	47
Kitimaat Village	648	080	48	Above Communities	58,653 persons	= 78 %	
Kitimat (DM)	9,226	080	49	Rest of Northwest	16,491 persons	= 22 %	
Gitselasu / Kitselas	246	088	50	Total Population	75,144 persons	= 100 %	

DM = District Municipality C = City VL = Village U = Unincorporated / Designated Place

We have relied upon numerous sources for the above population estimates. The source for each community appears in the "Ref" column of the table. We relied upon the figures published by INAC for First Nation community populations. We feel the INAC figures are the most reliable and accepted as the figures are jointly maintained by the communities.

In most cases, the totals shown for First Nations are an aggregate from several communities belonging to a First Nation and then attributed to the community shown. Technically speaking, the figures shown above represent "registered persons residing on own reserve." Source: First Nations Profiles; February 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>

Population Age-Structure Overview



Children and youth from ages 0 -17 years comprise 21.2 % of the Haida Gwaii Local Health Area (LHA) population. The proportion for BC is 18.8

We now know that the early years are important and that early experiences set trajectories for lifelong learning, behavior and health. There are a few LHAs in northern BC where the data shows that youth are at risk. ^{51, 52, 53, 54, 55, 56, 57}

Adults from ages 18 - 64 years comprise 66.7% of the Haida Gwaii population. As the principal income earner, this group stimulates the local economy and contributes significantly to the welfare of younger and elder persons. In fact, our social and economic reliance upon this group is often expressed in terms of child and senior dependency ratios.⁵⁸ There have been outflows of population since the mid-1990s.⁵⁹ We suspect that this age group has been a large proportion of this out-migration.

Seniors from ages 65+ years comprise 12.0% of the Haida Gwaii population. This group is expected to grow quickly over the next 15 years. The 65+ and 75+ populations in Haida Gwaii LHA are expected to grow by 127 % and 160 % respectively by 2025.⁶⁰

Aboriginal peoples comprise approximately 39.2 % of the Haida Gwaii population. In northern BC, the Aboriginal population is a young population: 29.6 % of persons are under age 15. This compares to 16.1% for the BC population overall.^{61 62}

Population Diversity

Northern B.C. is unique in its cultural identity. Across this vast landscape there is an amazing diversity of Aboriginal peoples and cultures and a vibrant and growing mix of friends and neighbors who infuse other global perspectives into the northern mosaic.

Local Health Area	Percent of Local Area Population ⁶³	
	Visible Minorities	Aboriginal Persons
LHA 050 - Haida Gwaii	1.9	39.2
LHA 051 - Snow Country	---	---
LHA 052 - Prince Rupert	9.9	38.9
LHA 053 - Upper Skeena	1.0	69.2
LHA 054 - Smithers	3.6	11.5
LHA 080 - Kitimat	6.0	18.1
LHA 088 - Terrace	5.1	23.6
LHA 028 - Quesnel	4.6	11.6
LHA 055 - Burns Lake	0.9	27.7
LHA 056 - Nechako	3.5	22.1
LHA 057 - Prince George	5.1	10.9
LHA 059 - Peace River South	2.0	13.8
LHA 060 - Peace River North	2.2	9.5
LHA 081 - Fort Nelson	5.0	20.8
LHA 087/094 - Stikine Telegraph	---	---
LHA 092 - Nisga'a	0.5	92.7
Northwest HSDA	5.1	30.0
Northern Interior HSDA	4.6	13.1
Northeast HSDA	2.4	12.4
Northern BC Overall	4.2	17.5
BC Overall	24.8	4.8

Source: BC Stats. Regional Socio-economic Profiles <http://www.bcstats.gov.bc.ca/data/sep/index.asp>

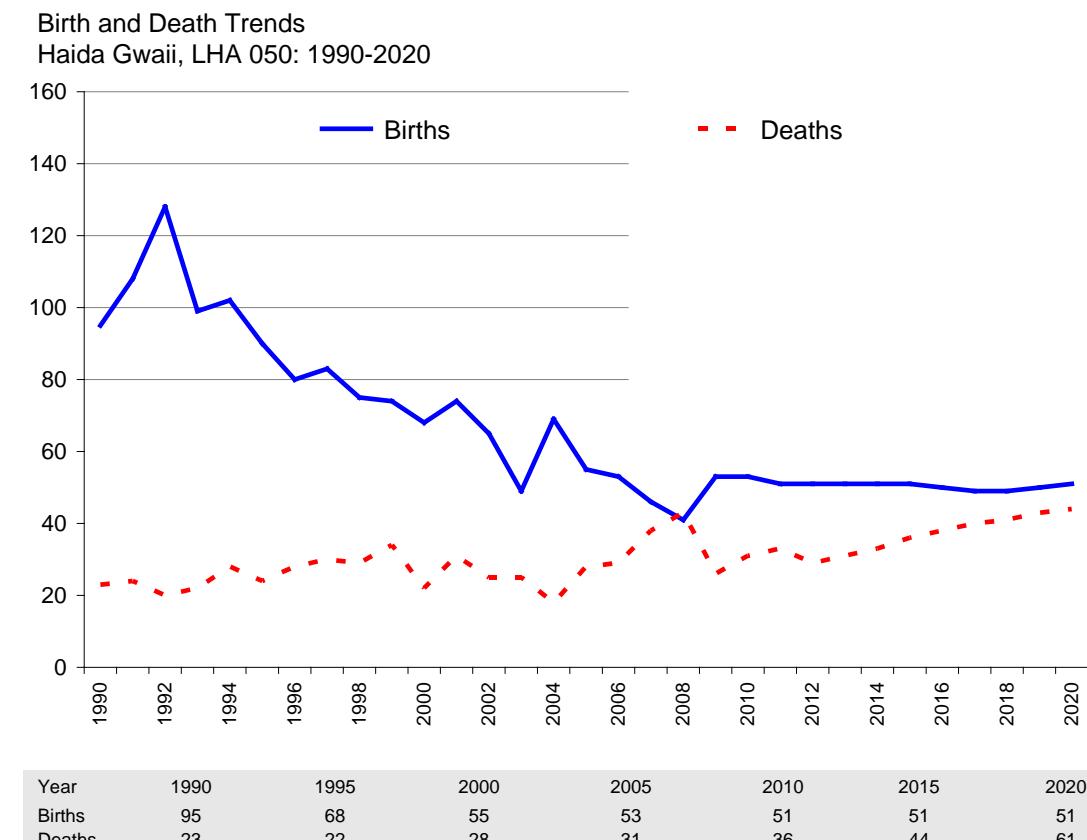
There is often confusion surrounding the commonly used terms Aboriginal and visible minority. Moreover, this type of terminology may seem out of step with the cultural diversity of contemporary Canada. We have used this terminology because it is the prevailing language and there is a general understanding of the meanings.

A departure point on this topic is the Statistics Canada Census Dictionary.

<http://www12.statcan.gc.ca/census-recensement/2006/ref/dict/index-eng.cfm>

Birth and Death Trends

Births, deaths, migration, fertility rates and age structure are the key components of population growth and change. The graph below shows the historical and projected number of births and deaths in the Haida Gwaii LHA.⁶⁴



The decline in birth numbers and increased deaths may reflect the effects of an aging baby boomer generation that is moving out of the child bearing years.

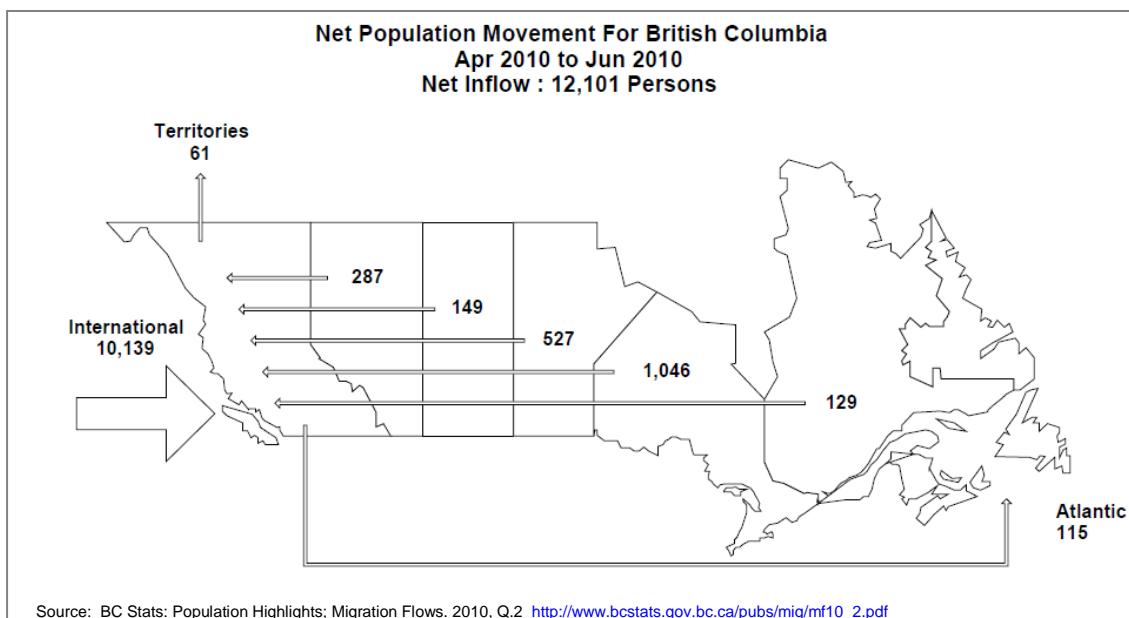
The birth decline may also indicate that people in their most productive childbearing years (ages 20 - 29) have moved away from the area.^{65 66} This is a possibility as there are almost 1000 less persons residing in Haida Gwaii today, than in 1993.⁶⁷ As well, since the mid 1990's, there has been a net outward migration of over 7,700 persons from the Skeena-Queen Charlotte Regional District which includes Haida Gwaii.⁶⁸

Women may also be tending towards having fewer children. We use a statistic called the Total Fertility Rate (TFR) to give us an indication of the number of children that women, in a certain geographic area, may be having in their lifetimes.

Migration

British Columbia continues to experience strong net inflows of people (see graphic). However, the northern regions (see table) continue to show a net outward migration.

We may be surprised to see the continued out-flow in certain areas given what we know about regional prosperity and growth. There is an explanation. The migration estimates rely upon the Canada Revenue Agency (CRA) income tax file. We know that with our resource sector prosperity, that some of the people who reside in northern BC are temporary residents. That is, they maintain a permanent address elsewhere. This temporary population will not be captured in the data as permanent residents.



Net Migrations in Northern BC Regional Districts 1996/97 - 2008/09 ⁶⁹

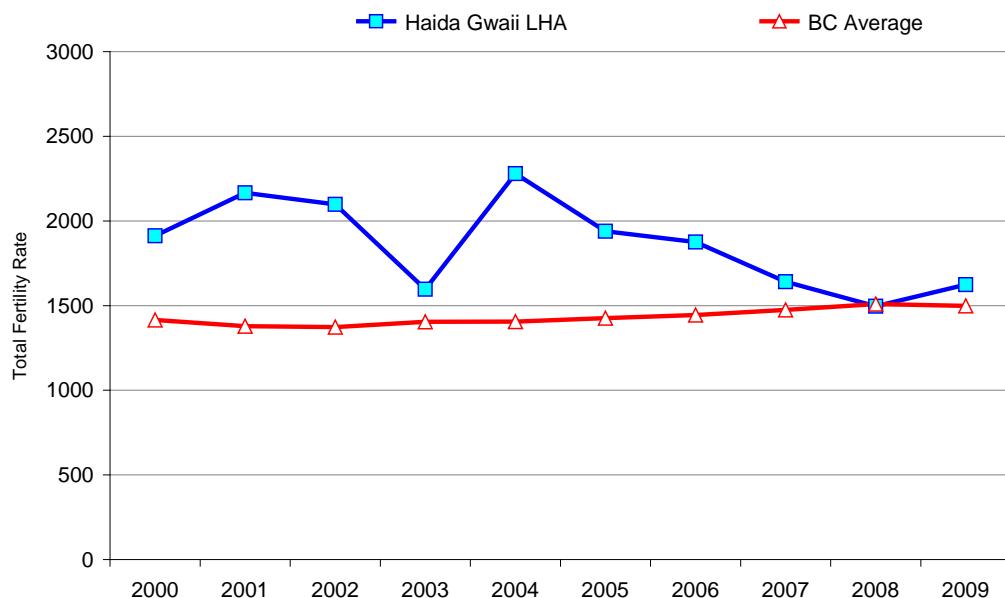
Year	Northwest			Northern Interior			Northeast		North Net Migration
	Skeena Q.C.I.	Kitimat Stikine	Stikine	Bulkley Nechako	Fraser Ft George	Cariboo	Northern Rockies	Peace River	
1996 - 97	-757	-478	-63	338	65	717	33	-287	-432
1997 - 98	-1,133	-1,039	-36	-471	-1,271	-818	-220	-493	-5,481
1998 - 99	-875	-1,038	-14	-576	-2,202	-1,060	-140	-1,264	-5,419
1999 - 00	-709	-966	-15	-670	-2,073	-1,408	-190	-1,557	-7,588
2000 - 01	-678	-1,126	-6	-931	-1,910	-1,322	84	-713	-6,602
2001 - 02	-703	-1,393	24	-1,033	-1,983	-1,237	-48	-305	-6,678
2002 - 03	-652	-997	-73	-644	-1,899	-898	37	-129	-5,255
2003 - 04	-542	-783	-28	-331	-876	-596	66	-58	-3,148
2004 - 05	-410	-837	-22	-706	-216	-130	-85	-94	-2,500
2005 - 06	-389	-670	-6	-375	-60	144	-143	649	-850
2006 - 07	-211	-309	-2	-377	218	118	-283	423	-423
2007 - 08	-62	-64	64	-363	-758	47	-314	-309	-1,759
2008 - 09	-103	-148	58	-442	-1,087	-105	-388	-702	-2,917
Subtotal	- 7,724	- 9,848	- 119	- 6,581	- 14,052	- 6,548	- 1,591	- 4,839	- 49,052

Total Fertility Rates

The Total Fertility Rate (TFR) tells us the number of children that 1,000 women ages 15 - 49 yrs. in a certain geographic area, may be having in their lifetimes. A high TFR means more children. A lower TFR means fewer children per woman per lifetime

The TFR helps us to ascertain whether the number of children being born is sufficient to replace the population that is being lost through deaths and out-migration.

Total Fertility Rate per 1,000 women
Haida Gwaii Local Health Area, LHA 050: 2000 - 2009



Births per 1,000 women (Total Fertility) by Local Health Area, 2000 – 2009 ⁷⁰										
Local Health Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
028 Quesnel	1552	1505	1495	1549	1698	1641	1837	1876	2142	1895
050 Haida Gwaii	1912	2166	2098	1597	2279	1939	1875	1641	1496	1624
051 Snow	1489	1870	1114	2566	402	2058	521	3684	1595	2321
052 Prince Rupert	1766	1776	2101	1990	1650	1619	1866	1862	2314	1991
053 Upper Skeena	1961	2112	1868	2120	1774	2259	1968	1818	1725	2430
054 Smithers	2299	2084	1877	2148	2290	2096	2298	2287	2362	2254
055 Burns Lake	1784	2010	1728	1942	1677	2116	1712	2057	2030	1837
056 Nechako	1850	2079	2052	2131	2412	2043	2338	2189	2673	2471
057 Prince George	1461	1403	1440	1492	1491	1572	1629	1666	1750	1727
059 Peace South	1808	1558	1712	1888	1745	1587	1840	2094	2208	2055
060 Peace North	2053	2150	1942	2179	2103	2208	2025	2307	2370	2331
080 Kitimat	1705	1339	1805	1575	1208	1489	1392	1555	1489	1780
081 Fort Nelson	1776	1476	1849	1959	2139	2104	1844	2035	1918	1963
087 Stikine	1163	1320	866	515	484	923	641	1207	363	1591
088 Terrace	1826	1916	1847	2067	1836	2059	2063	2036	2203	2339
092 Nisga'a	2286	2382	2458	1750	1658	2073	1902	3485	2372	3290
094 Telegraph	1393	1970	1914	1175	1802	947	2012	3388	1362	3251
BC Average	1415	1379	1373	1404	1405	1426	1444	1475	1509	1498

Source: Age-specific and Total Fertility Rates by Local Health Area. 1987 – 2009: BC Stats: Updated January 2010.

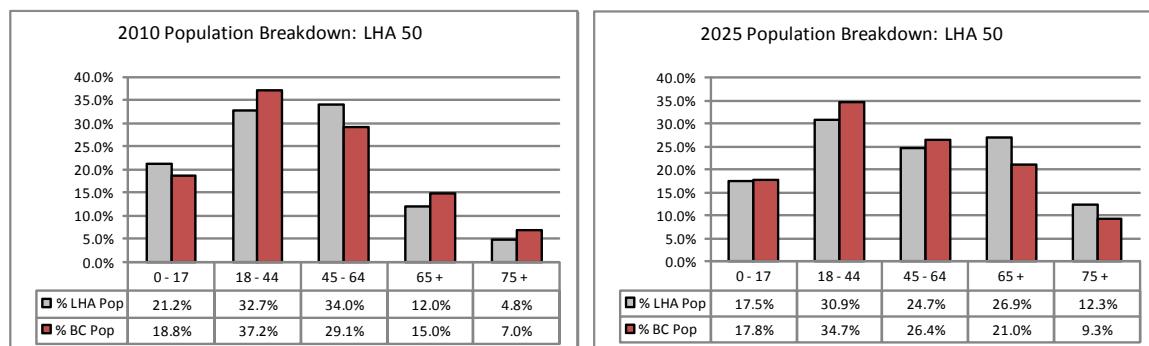
Population Projections to 2025

We defer to the considerable expertise of BC Stats, the central statistics agency for the Province of British Columbia, for our population estimates and projections.

In preparing these types of estimates, BC Stats considers the births, deaths, migration patterns, fertility rates, survival of age group cohorts and the population's age structure. Additional information such as the changes in residential electrical connections, changes in health care coverage registrations and the anticipated impact of known major capital projects are some additional pieces of information that help to refine our population estimates and projections.

Population projections are only one possible scenario of a future population.⁷¹

Shown below are population projections for the Prince Rupert LHA and BC overall.⁷²



2010	LHA - 50		BC
	Ages	Persons	Percent
0 - 17	989	21.2%	18.8%
18 - 44	1,526	32.7%	37.2%
45 - 64	1,588	34.0%	29.1%
65 +	562	12.0%	15.0%
75 +	224	4.8%	7.0%
Total	4,665	100.0%	100.0%

2025	LHA - 50		BC
	Ages	Persons	Percent
0 - 17	828	17.5%	17.8%
18 - 44	1,464	30.9%	34.7%
45 - 64	1,171	24.7%	26.4%
65 +	1,277	26.9%	21.0%
75 +	583	12.3%	9.3%
Total	4,740	100.0%	100.0%

Additional Resources

BC Stats: Major Capital Projects in excess of \$15 million
http://www.bcstats.gov.bc.ca/pubs/pr_mproj.asp

BC Stats: Populations and Demographics-Frequently Asked Questions
http://www.bcstats.gov.bc.ca/data/pop/faq_pop.asp#Q1

Determinants of Health

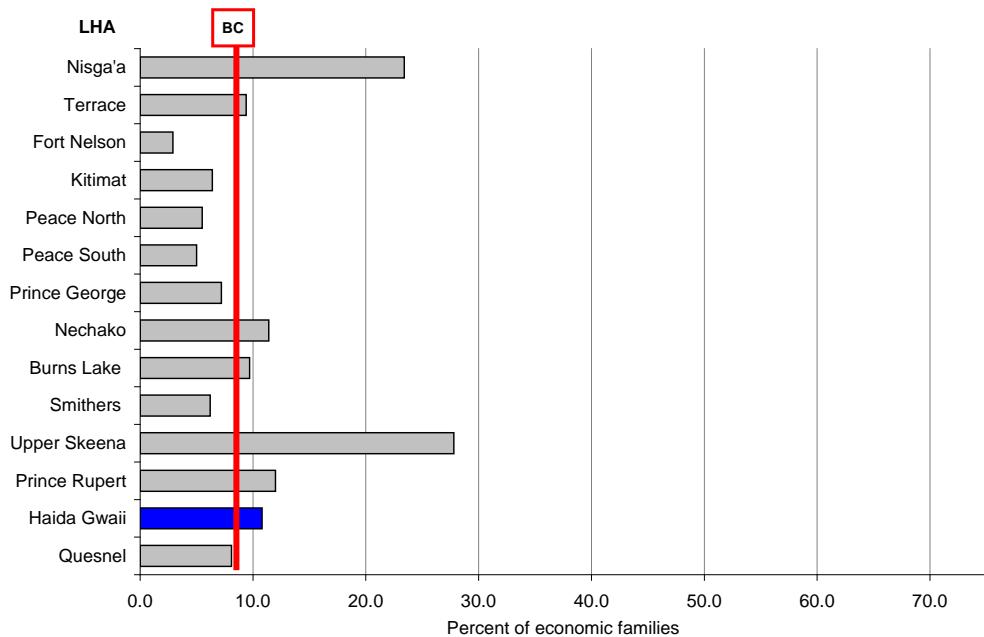


Haida Gwaii Local Health Area Compared to BC

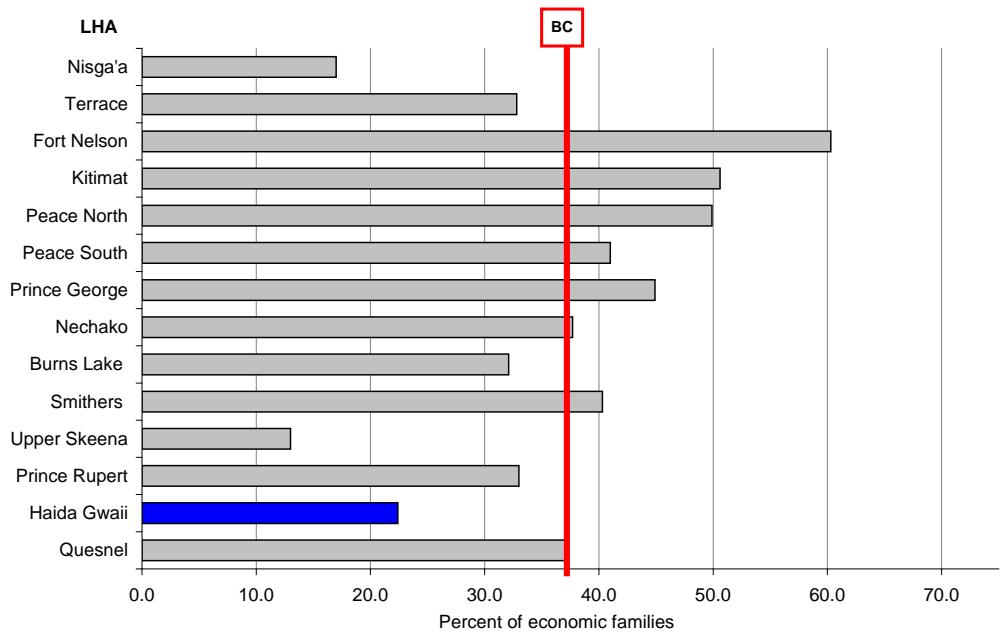
We know that many things determine the wellbeing and prosperity of people and communities in northern BC. On this page and in the graphics that follow, we have summarized some of the data contained in the very comprehensive Socio-economic Profiles produced by BC Stats <http://www.bcstats.gov.bc.ca/data/sep/index.asp>

Haida Gwaii Local Health Area - LHA 050	LHA %	BC %
Population who are 0 – 19 years old ⁷³	20.8	18.8
Population who are ages 65+ ⁷⁴	11.8	15.0
Visible minorities	1.9	24.5
Aboriginal identity	39.2	4.8
Income		
Families earning < \$20,000 per year	10.8	8.0
Families earning from \$20,000 - \$80,000 per year	65.6	53.8
Families earning > \$80,000 per year	22.4	38.1
* Persons (ages 0 - 64) receiving income assistance > 1 year	2.7	2.9
Early Development and Educational Achievement		
Percent of kindergarten children vulnerable on 1 or more EDI scales ⁷⁵	27.3	28.6
Percent of Grade 4 & 7 students below standard on FSA - Reading	29.9	20.5
Percent of Grade 4 & 7 students below standard on FSA - Writing	36.7	18.7
Percent of Grade 4 & 7 students below standard on FSA - Math	36.7	20.3
Grade 10 Provincial-exam non-completion rate - English	28.7	13.1
Percent of 18-year-olds who did not graduate in 2007-09	51.2	29.8
Persons ages 25 - 54 without high school completion	27.3	11.1
Population age 20+ with university degree	15.0	24.1
Housing		
Per cent of households that are renting	33.6	30.4
Per cent of tenants paying 30% or more of income towards housing	24	43.4
Per cent of owners paying 30% or more of income towards housing	12.1	22.7
Children and Youth at Risk		
Families headed by a single parent	32.7	25.7
* Children (ages 0 -18) receiving income assistance > 1 year	2.0	2.1
* Youth (ages 19 - 24) receiving income assistance > 1 year	-	1.9
Child abuse rate per 1,000 population, ages 0 - 18	17.3	7.0
Children in care rate per 1,000 population, ages 0 – 18	15.4	9.4
Other Indicators		
Alcohol sales per capita in 2009 (Dollars spent)	1371	801
Alcohol sales per capita in 2009 (Litres consumed)	208	112
* The number of persons experiencing hardship and receiving Income Assistance may be significantly understated in some areas as the figures shown above do not include Aboriginal people who receive assistance while living on reserve.		
Data Source: except where noted, BC Stats: http://www.bcstats.gov.bc.ca/data/sep/index.asp		

Percent of Families Earning less than \$20,000 per year: 2006

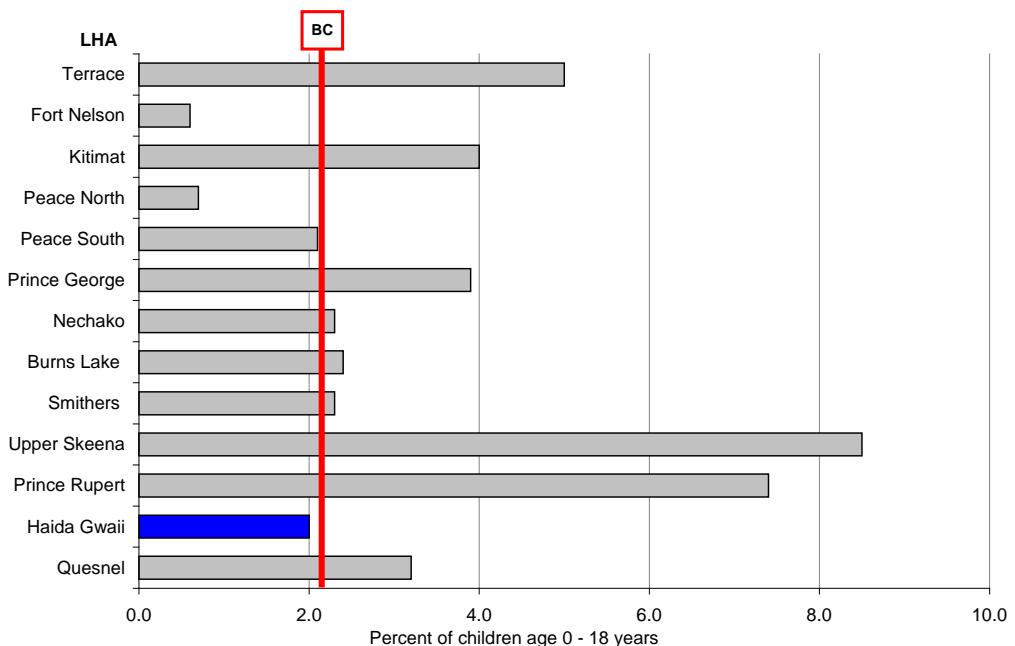


Percent of Families Earning More than \$80,000 per year: 2006

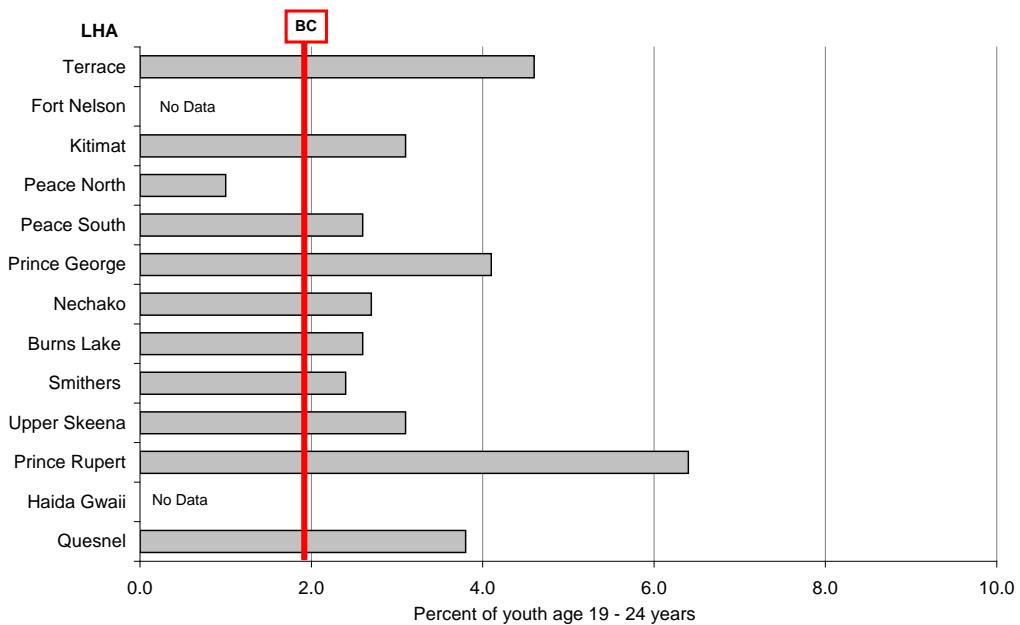


Data Source: BC Stats-BC Regional Socio Economic Profiles and Indices. Spring 2010. <http://www.bcstats.gov.bc.ca/data/sep/index.asp>

Percent of Children age < 18, receiving Income Assistance for >1 year: Sept. 2009

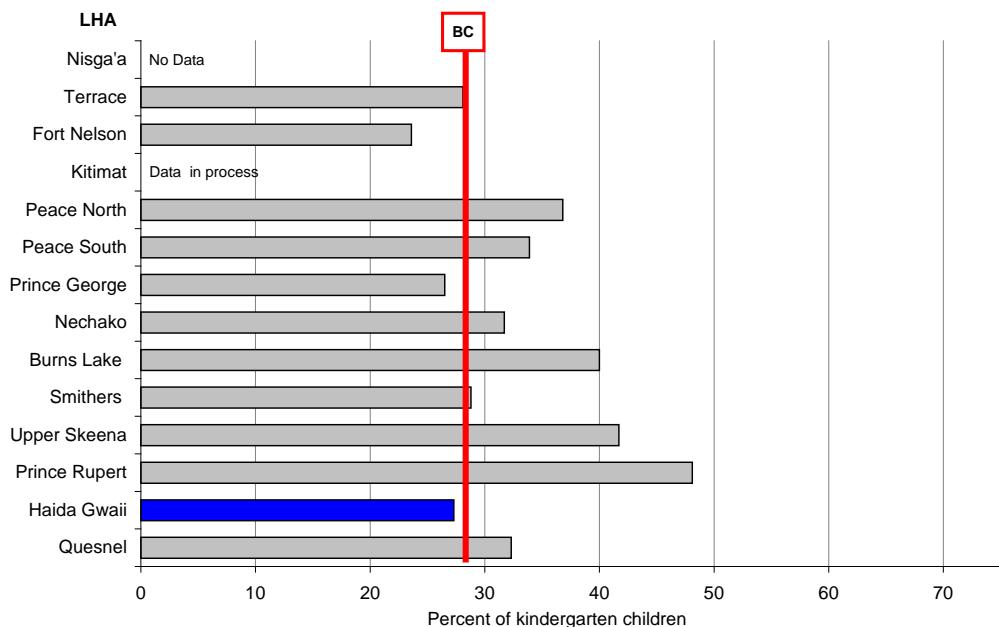


Percent of Youth 19 - 24, receiving Income Assistance for >1 year: Sept. 2009

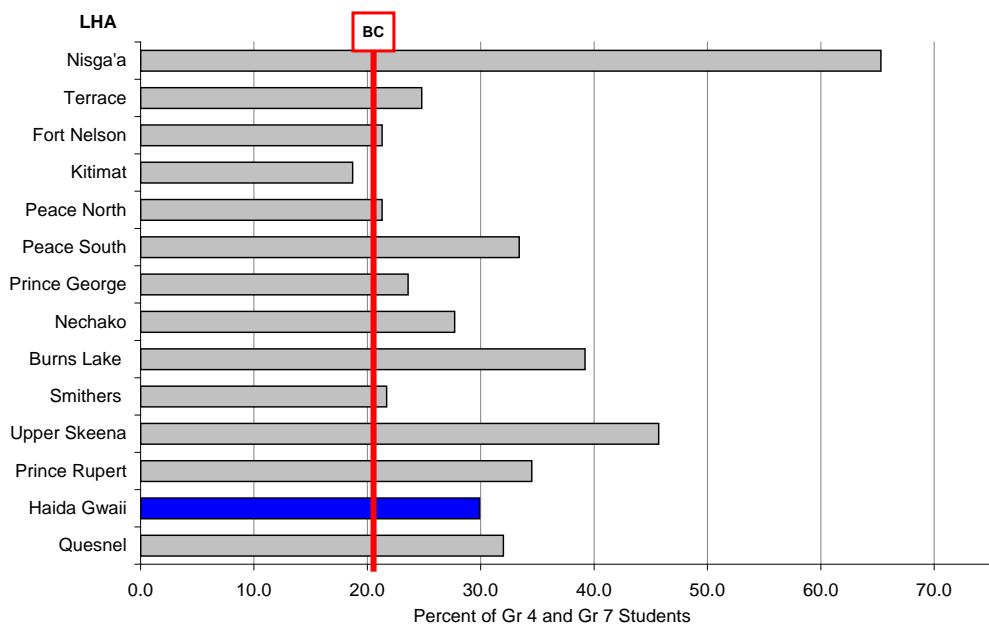


Data Source: BC Stats-BC Regional Socio Economic Profiles and Indices. Spring 2010. <http://www.bctransit.gov.bc.ca/data/sep/index.asp>
 * Income Assistance figures shown here do not include the many Aboriginal children and youth living in on-reserve circumstances.

Percent of Kindergarten Children Vulnerable on EDI: 2008-09

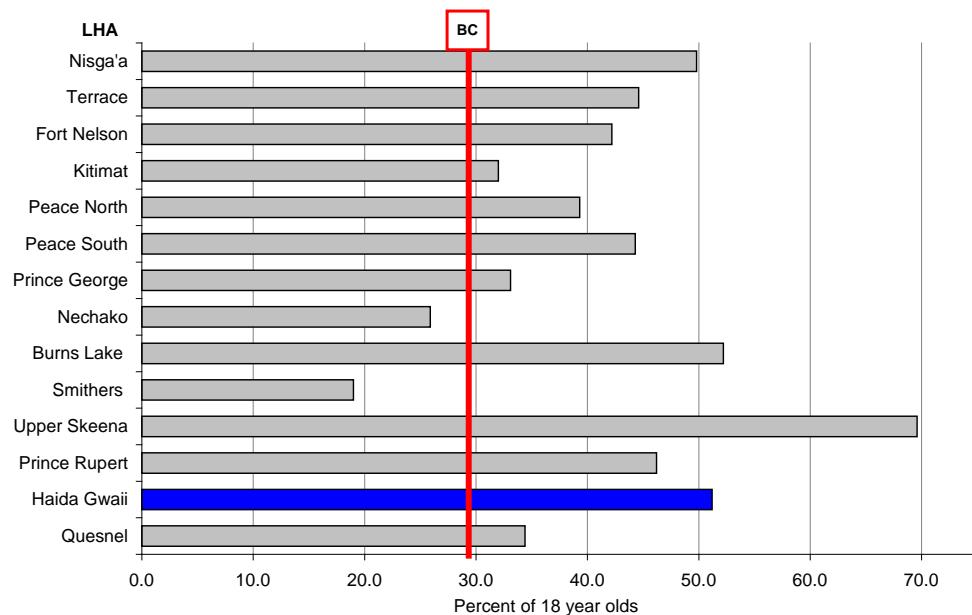


Percent of Students Below Average in Reading--FSA Score Average 2007-09

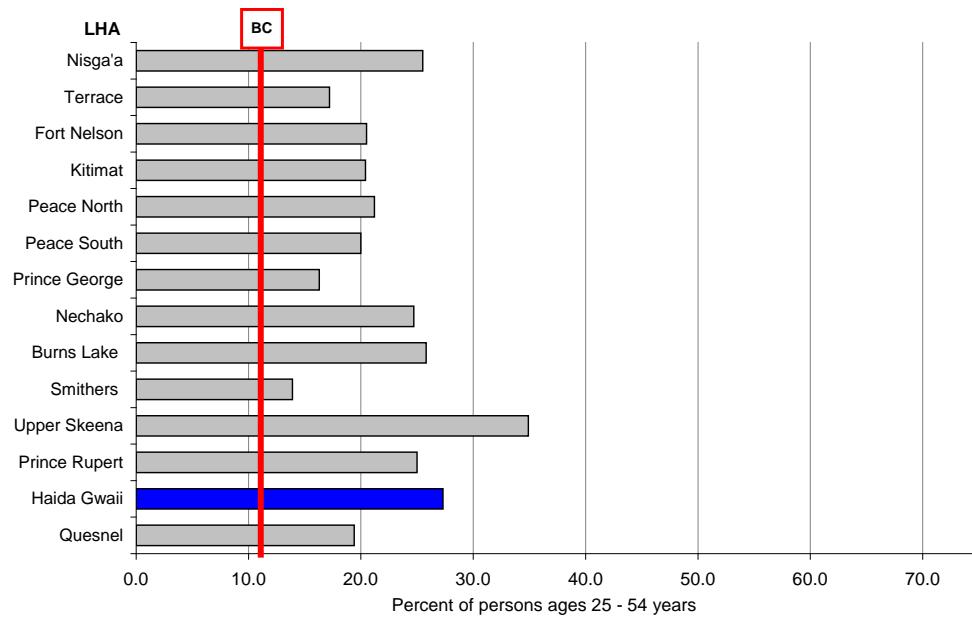


Data Source: BC Stats-BC Regional Socio Economic Profiles and Indices. Spring 2010. <http://www.bcstats.gov.bc.ca/data/sep/index.asp>
Data Source: Early Development Index obtained from Human Early Learning Partnership. 2010. <http://www.earlylearning.ubc.ca>

Percent of 18 year olds who did not graduate: Average 2007 - 2009

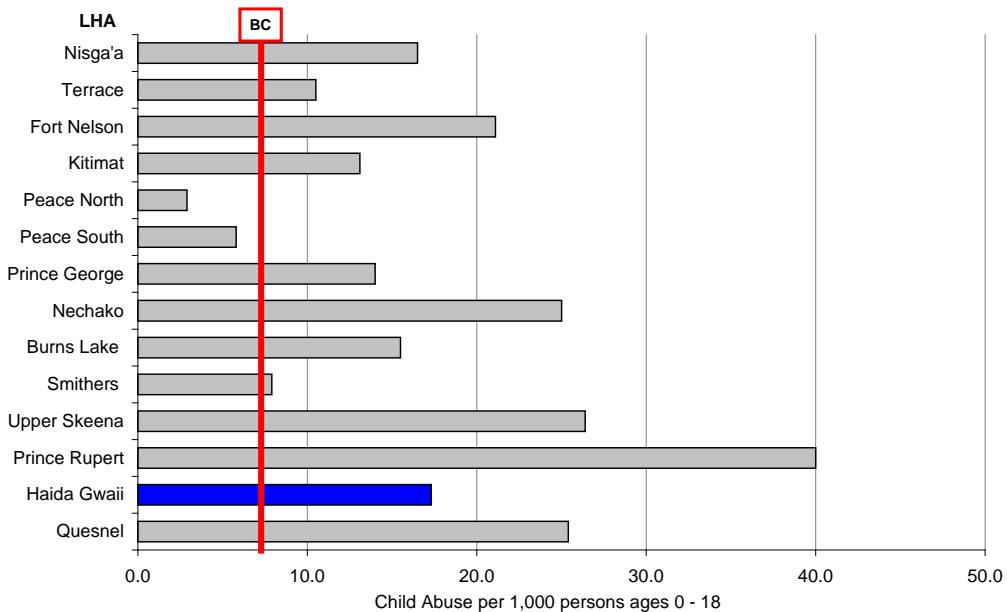


Percent of 25 - 54 year olds with no high-school completion: 2006

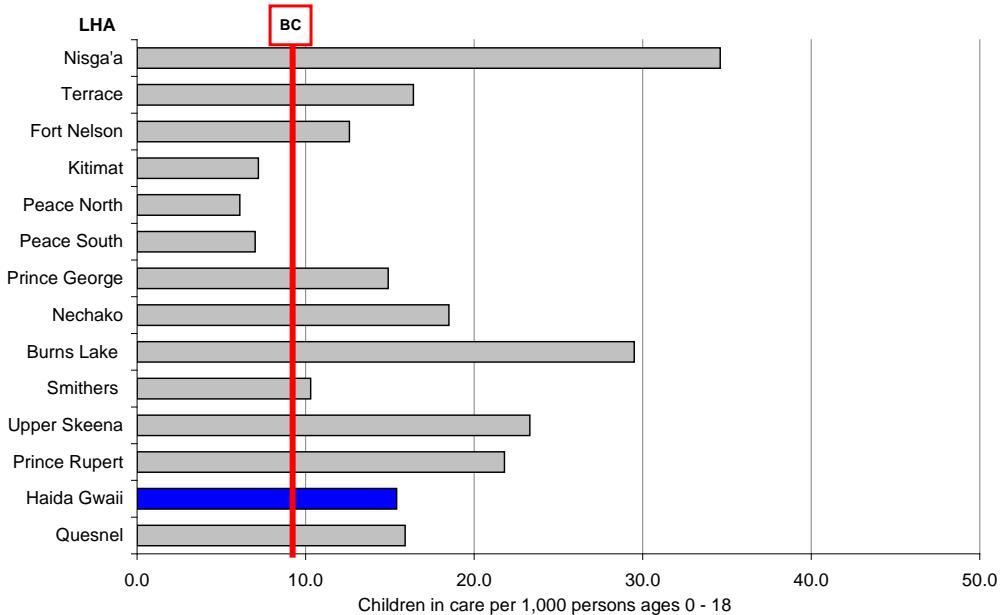


Data Source: BC Stats-BC Regional Socio Economic Profiles and Indices. Spring 2010. <http://www.bcstats.gov.bc.ca/data/sep/index.asp>

Child Abuse per 1000 persons ages 0 - 18: December 2009



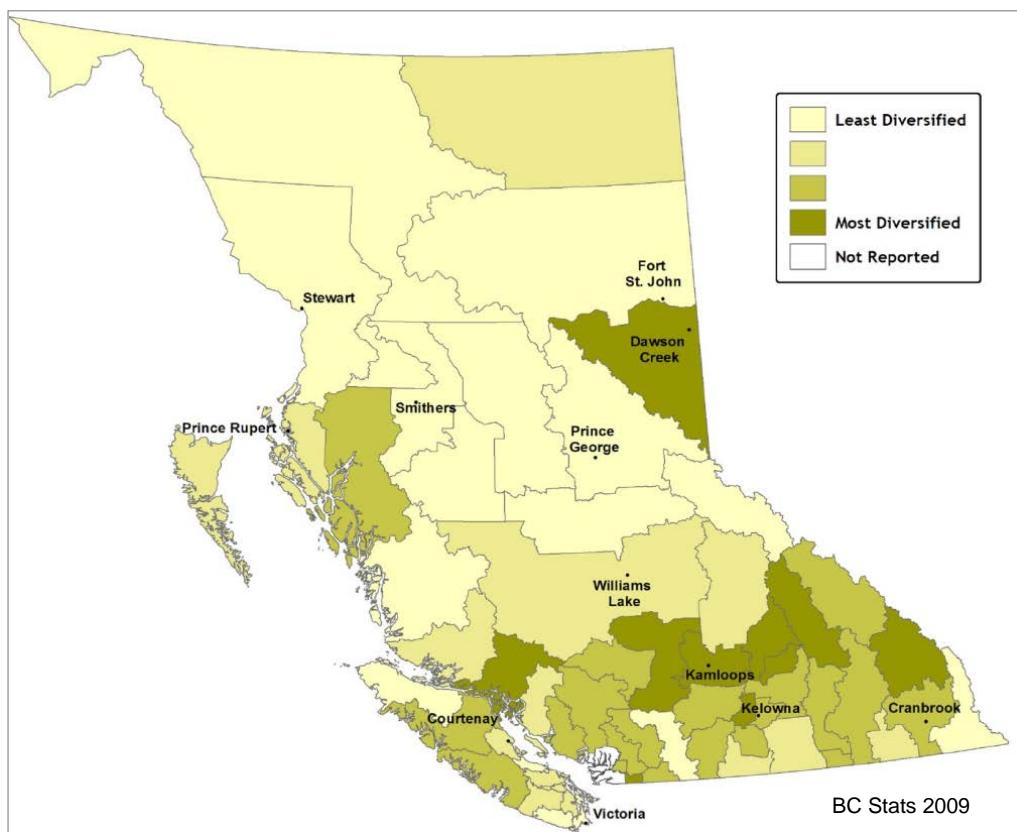
Children in Care per 1000 persons ages 0 - 18: December 2009



Data Source: BC Stats-BC Regional Socio Economic Profiles and Indices. Spring 2010. <http://www.bcstats.gov.bc.ca/data/sep/index.asp>

Summary Indices—Economic Diversity ⁷⁶

Employment and economic opportunities that exist for people in northern BC have been greatly determined by the relative prosperity – boom or bust – of the resource sectors. While resource sector jobs provide good benefits when things are booming, many northern B.C. communities have also experienced the downside or bust.



Many analysts believe that greater local area economic diversity can increase the ability of northern resource sector communities to weather the economic downturns.

Some of the least diversified economies in B.C. are located in the north. In the table below, the higher the Diversity Index score, the higher the local area's economic diversity; the lower the index value, the lesser the local area's economic diversity.

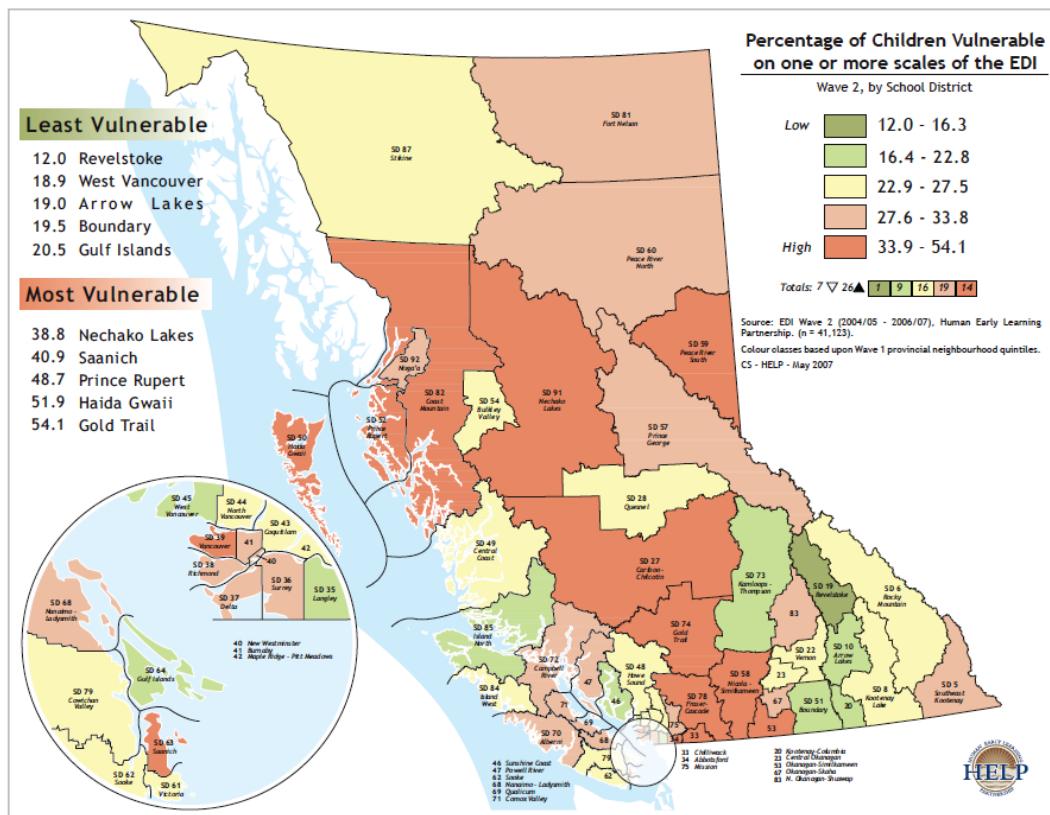
Most Diversified ⁷⁷	Diversity Index	Least Diversified	Diversity Index
Invermere	79	Vanderhoof	59
Ashcroft	77	Fernie	59
Dawson Creek	76	Hazelton	57
Bute Inlet	75	Quesnel	56
Peachland	75	Stikine	54
Spallumcheen	75	Central Coast	52
Salmon Arm	75	Stewart	51

Source: BC Stats Local Area Economic Dependencies. March 2009.

Summary Indices - Early Development Index ⁷⁸

The research shows that many challenges in adult society - mental health problems, obesity, heart disease, criminality, competence in literacy and numeracy - have their roots in early childhood. ⁷⁹

The Early Development Index (EDI) is a tool that kindergarten teachers can use to assess the development and relative vulnerability of children in their classrooms.



The EDI measures kindergarten children's early development along five scales:

- Physical health and well-being
- Emotional maturity
- Communication skills and general knowledge
- Social competence
- Language and cognitive development

EDI results indicate that the children in Prince Rupert, Haida Gwaii and Nechako Lakes School Districts are some of the most developmentally vulnerable children in B.C.

For information on the EDI, including school district and community level reports:
<http://www.earlylearning.ubc.ca/research/initiatives/early-development-instrument/>

Summary Indices - British Columbia Socio-economic Indices

BC Stats has summarized the large amounts of data related to crime, economic hardship, education and health into a number of composite indices. These indices illuminate regions that may be experiencing socio-economic stress relative to other areas of the province. The B.C. Socio-economic indices include:

- The Overall Socio Economic Index
- The Index of Economic Hardship
- The Index of Crime Concerns
- The Index of Education Concerns
- The Index of Children at Risk
- The Index of Youth at Risk
- The Index of Health Problems

Findings for northern BC

Generally speaking the rural and northern areas of B.C. fare poorly on these indices when compared to the urban and southern areas of the province. Specifically and consistently, the northern local health areas (LHAs) of Prince Rupert, Upper Skeena, Burns Lake and Nechako are very poorly ranked. These northern LHAs are more often than not, within the 10 lowest (worst) ranked areas in the province. At the same time, areas such as Smithers and Peace River North have relatively high scores.

We know that many things determine the wellbeing and prosperity of people and communities in northern BC. Living conditions, income, employment, education, sex (gender), housing, food, the environment, choices and behaviors around lifestyle and access to integrated health services, are just a few of these influences.^{80, 81}

The BC Socio-economic Indices summarize many of these factors.

Acknowledgements

The development of these socio-economic indices was supported by:

- Ministry of Aboriginal Relations and Reconciliation,
- Ministry of Advanced Education and Labour Market Development,
- Ministry of Children and Family Development,
- Ministry of Community and Rural Development,
- Ministry of Forests and Range,
- Ministry of Housing and Social Development,
- the Office of the Provincial Health Officer, and
- Rural Secretariat, Ministry of Community and Rural Development.⁸²

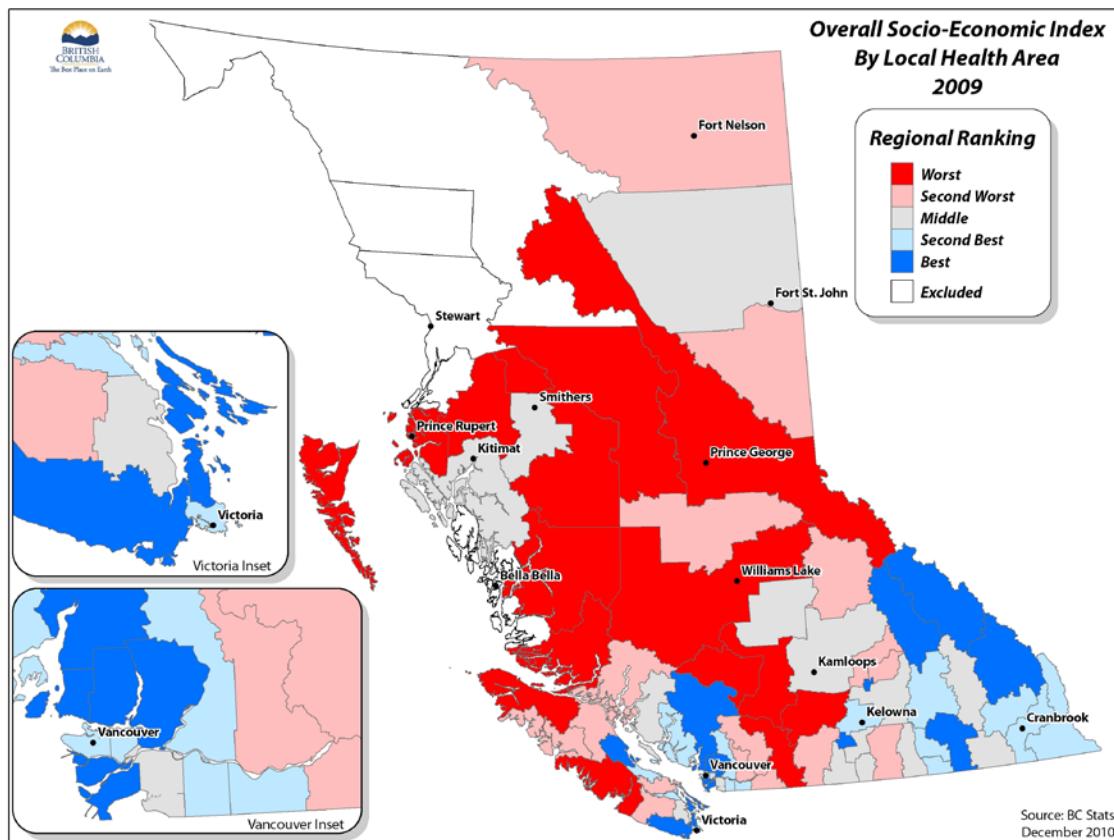
These maps, the data and supporting documentation are available from BC Stats.

<http://www.bcstats.gov.bc.ca/data/sep/index.asp>

Overall Socio-economic Index ⁸³

The Overall Socio-economic Index is composed of the following:

- The Index of Economic Hardship
- The Index of Crime Concerns
- The Index of Education Concerns
- The Index of Children at Risk
- The Index of Youth at Risk
- The Index of Health Problems



The northern LHAs ranking very poorly on this index include Haida Gwaii, Prince Rupert, Upper Skeena, Burns Lake, Nechako and Prince George.

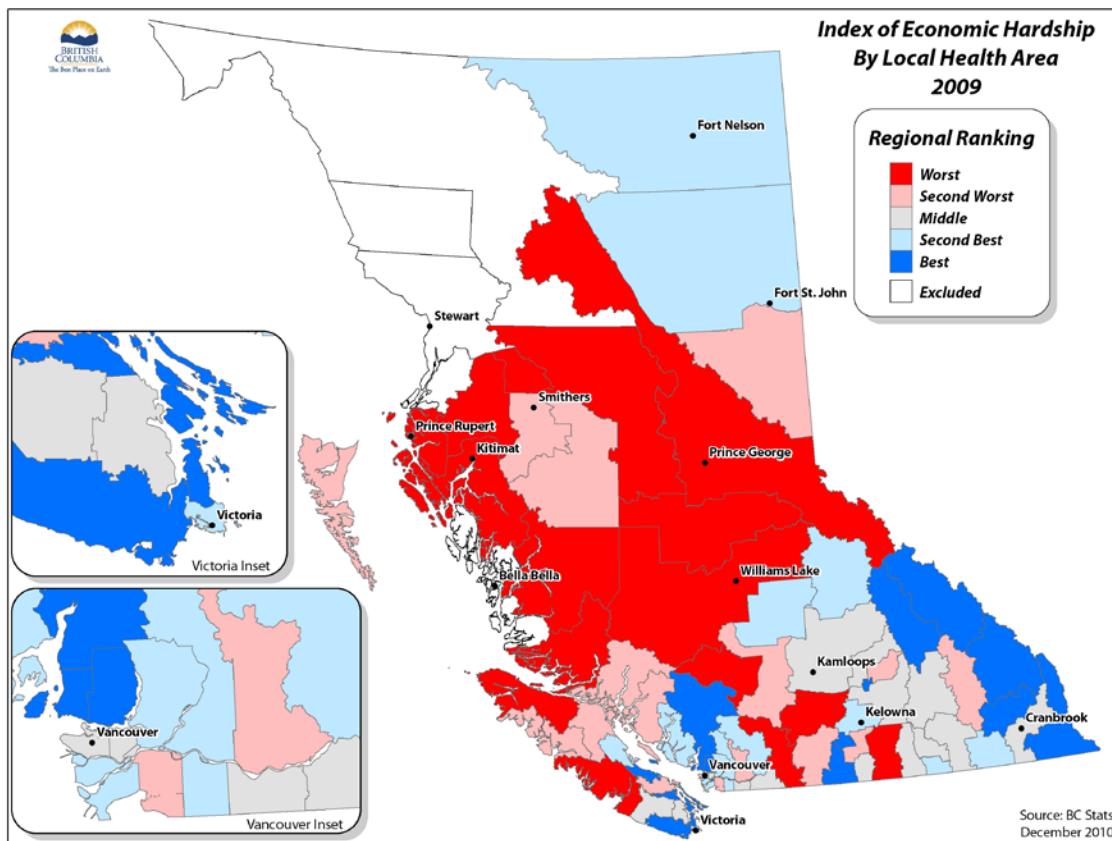
The LHAs that rank slightly better are colored pink in the above map and include Quesnel, Peace River South and Fort Nelson. The Peace River North, Smithers and Kitimat LHAs are coloured grey indicating that they rank somewhere in the middle.

The data was not sufficient to construct a ranking for the Nisga'a, Snow Country, Telegraph Creek and Stikine Local Health Areas.

Index of Economic Hardship ⁸⁴

The Index of Economic Hardship is composed of the following:

- Percent of Population age 0 - 64 on Income Assistance for more than 1 year
- Percent of Population age 0 - 64 on Income Assistance for less than 1 year
- Percent of seniors receiving maximum Guaranteed Income Supplement (GIS).



The northern LHAs ranking very poorly on this index include Prince Rupert, Upper Skeena, Kitimat, Nechako, Quesnel and Prince George.

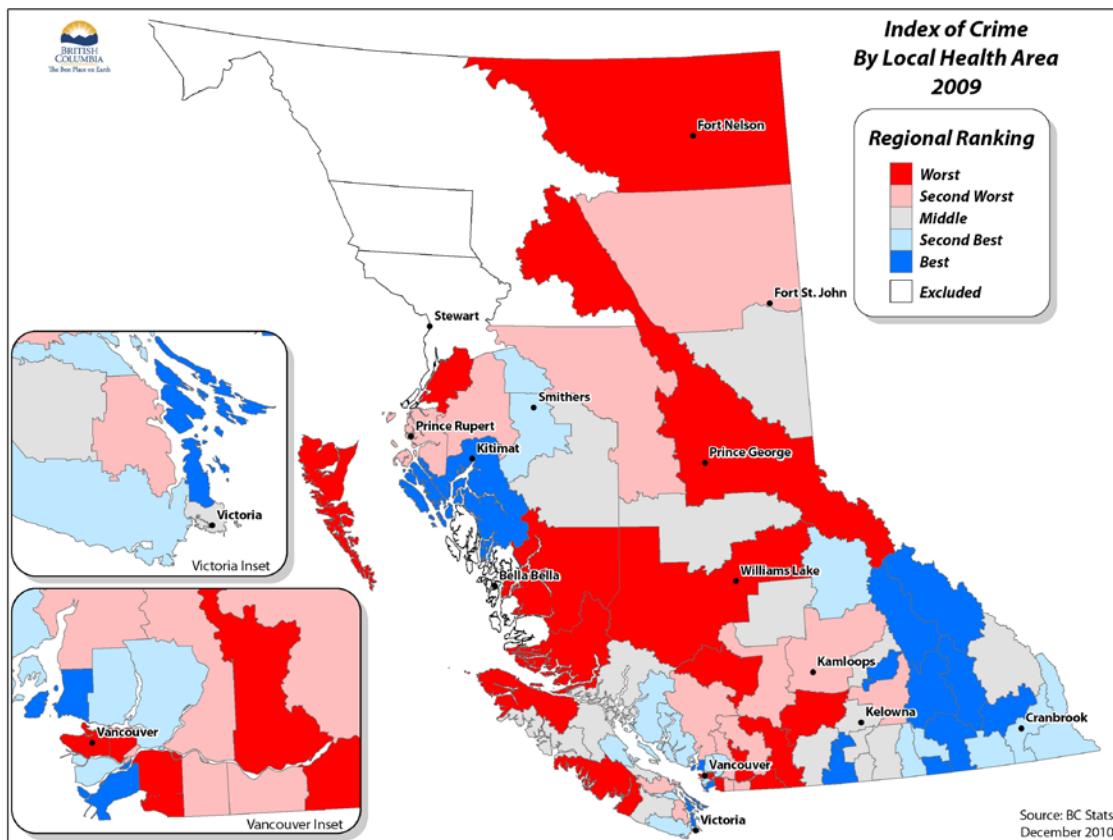
The LHAs that rank slightly better are colored pink in the above map and include the Peace River South, Burns Lake and Smithers. The Peace River North and Fort Nelson LHAs are colored light blue indicating that they rank among the second best in B.C.

Note: There may be a limitation in the data as it does not include persons who may be receiving income assistance while living on reserve. We know that in some areas this can be a significant proportion of the local population. Consequently, the economic hardship being experienced in some areas may be understated.

Index of Crime ⁸⁵

The composite Index of Crime is composed of the following:

- Offences per 1,000 population: violent crime
- Offences per 1,000 population: property crime
- Number of serious crimes per police officer



The northern LHAs ranking very poorly on this index include Prince George, Fort Nelson and Nisga'a.

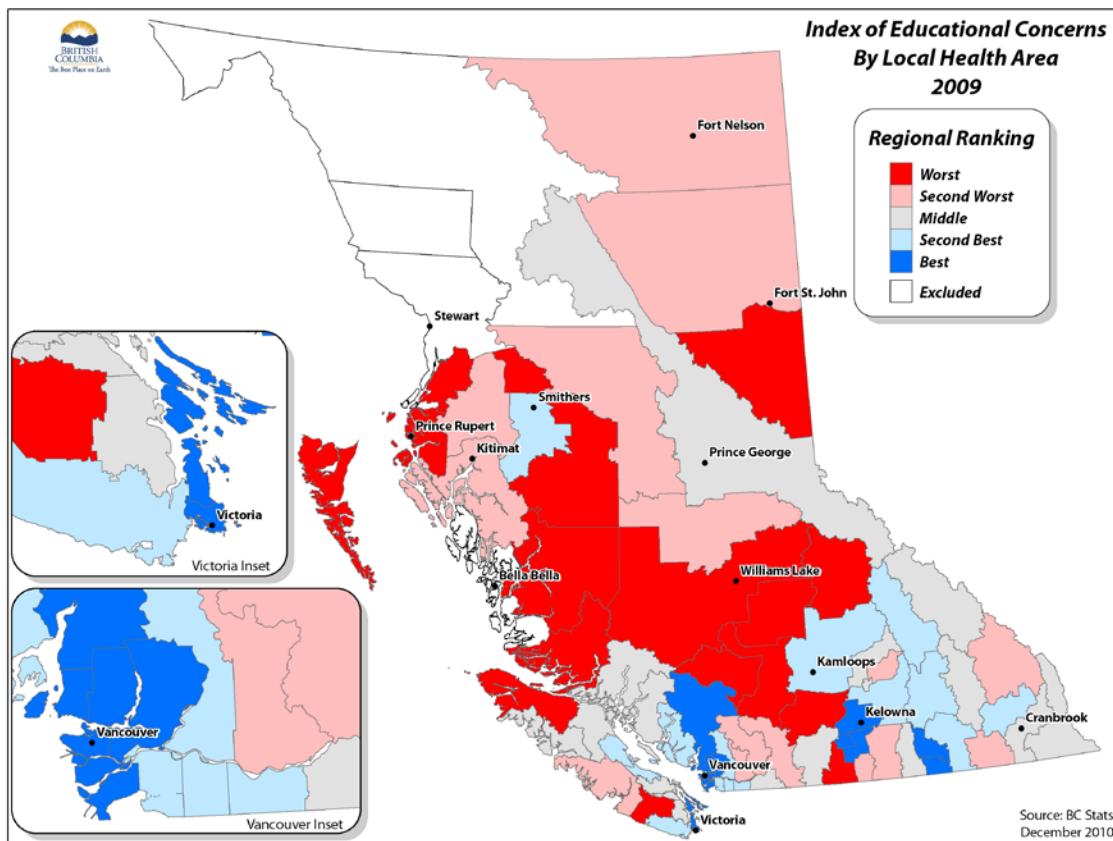
The LHAs that rank slightly better are colored pink in the above map and include the Nechako, Peace River North, Prince Rupert and Terrace LHAs. The Quesnel, Peace River South and Burns Lake are colored grey indicating that they rank somewhere in the middle. The best ranked areas in northern BC were Smithers, Upper Skeena and the Kitimat LHA.

The data was not sufficient to construct a ranking for the Snow Country, Telegraph Creek and Stikine Local Health Areas.

Index of Education Concerns ⁸⁶

The composite Index of Education Concerns is composed of the following:

- Percent of population aged 25 - 54 without post secondary credentials
- Percent of 18 year olds who did not graduate
- Grade 12 provincial exam non completion rate: Math
- Grade 12 provincial exam non completion rate: English
- Percent of grade 4 students below the standard in reading, writing and math.



The northern LHAs ranking very poorly on this index include Peace River South, Burns Lake, Upper Skeena, Nisga'a and Prince Rupert.

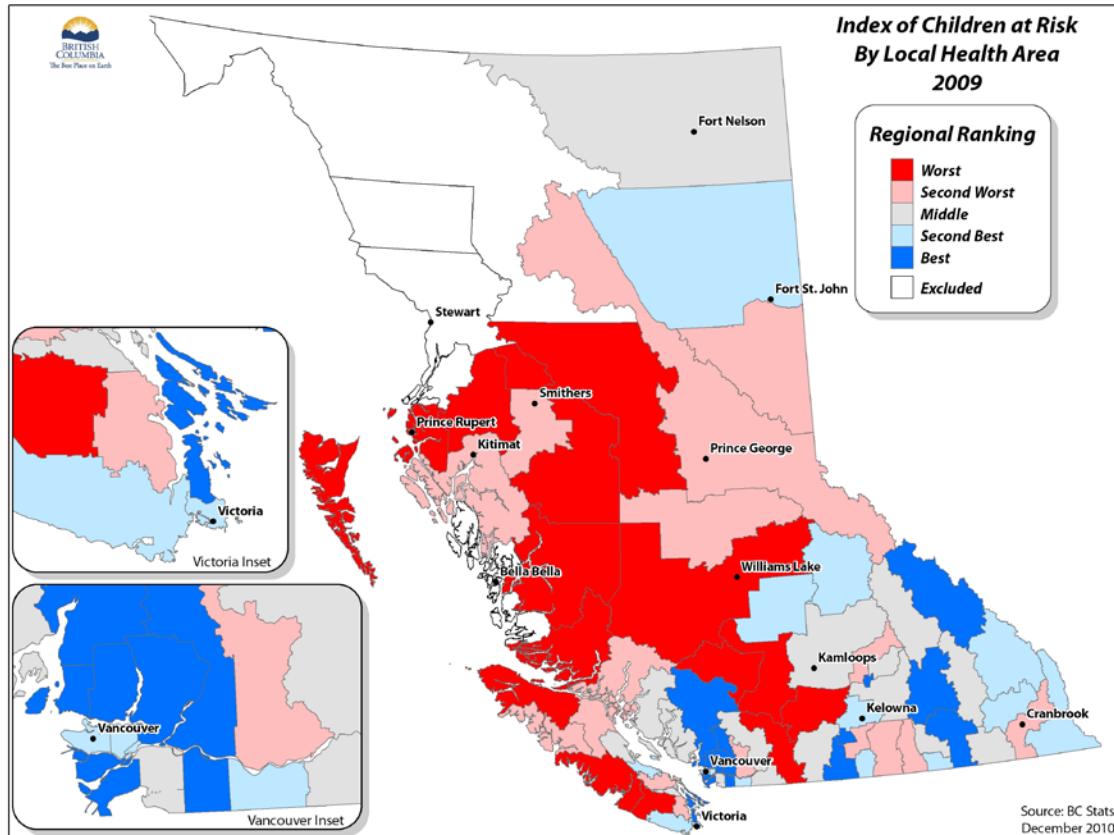
The LHAs that rank slightly better are colored pink in the above map and include the Quesnel, Nechako, Peace River North, Fort Nelson, Terrace and Kitimat LHAs. Prince George is colored grey indicating that it ranks somewhere in the middle. The best ranked area in northern BC was Smithers. The ranking for Smithers is in sharp contrast to the very poor ranking of its neighbors: Upper Skeena and Burns Lake.

The data was not sufficient to construct a ranking for the Snow Country, Telegraph Creek and Stikine Local Health Areas.

Index of Children at Risk ⁸⁷

The Index of Health Problems is composed of the following:

- Percent of children age <19 on Income assistance for more than 1 year
- Percent of children age <19 on Income assistance for less than 1 year
- Children in care per 1,000 population
- Infant mortality rate per 1,000 live births
- Percent of Grade 4 and 7 students below the standard in reading
- Serious juvenile crime: charges per 1,000 population, for ages 12 - 17.



The northern LHAs that rank very poorly on this index include the Nechako, Burns Lake, Upper Skeena Terrace and Prince Rupert.

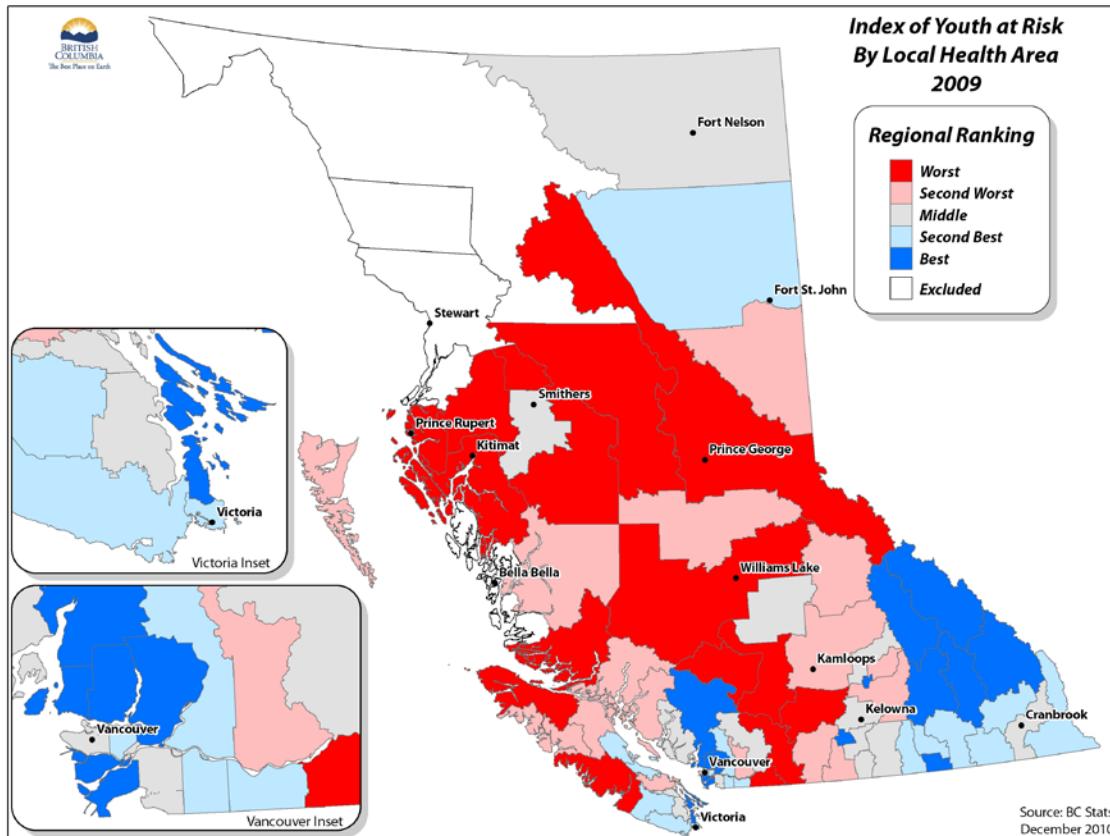
The LHAs that rank slightly better are colored pink in the above map and include the Fort Nelson is colored grey indicating that it ranks somewhere in the middle. The Peace River North LHA is colored light blue indicating that it ranks among the second best in the province.

The data was not sufficient to construct a ranking for the Nisga'a, Snow Country, Telegraph Creek and Stikine Local Health Areas.

Index of Youth at Risk ⁸⁸

The Composite Index of Youth at Risk is composed of the following:

- Percent of youth age 19 - 24 on Income Assistance for more than 1 year
- Percent of youth age 19 - 24 on Income Assistance for less than 1 year
- Percent of 18 year olds who did not graduate from high-school;
- Serious crime offences per 1,000 youth.



The northern LHAs that rank very poorly on this index include Prince George, Nechako, Burns Lake, Upper Skeena, Terrace, Kitimat and Prince Rupert.

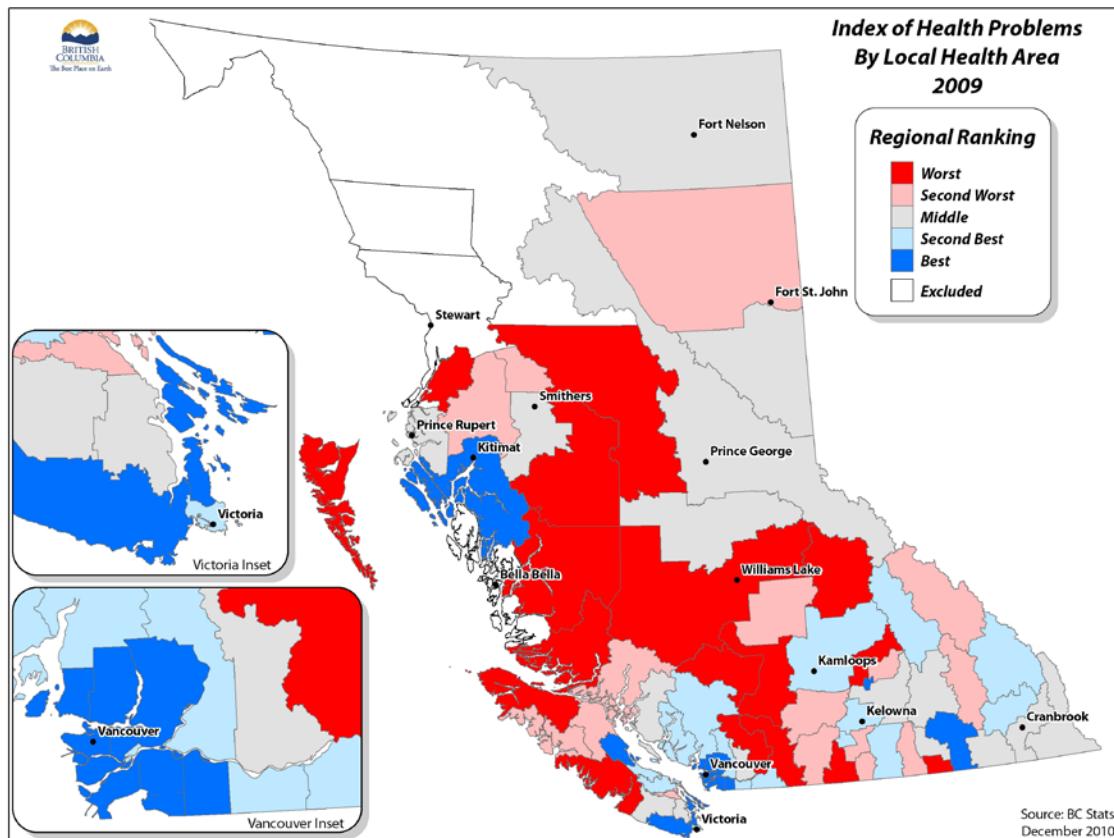
The LHAs that rank slightly better are colored pink in the above map and include the Quesnel and Peace River South LHAs. Fort Nelson and Smithers LHAs are colored grey indicating that they rank somewhere in the middle.

The data was not sufficient to construct a ranking for the Nisga'a, Snow Country, Telegraph Creek and Stikine Local Health Areas.

Index of Health Problems ⁸⁹

The composite Index of Health Problems is composed of the following:

- Life Expectancy at Birth
- Potential Years of Life Lost per 1,000 population; for natural causes
- Potential Years of Life Lost per 1,000 population; for accidental causes
- Potential Years of Life Lost per 1,000 population; for homicide / suicide.



The northern LHAs ranking very poorly on this index include Burns Lake, Nechako, Haida Gwaii and Nisga'a.

The LHAs that rank slightly better are colored pink in the above map and include Terrace, Upper Skeena and Peace River North. The Prince Rupert, Smithers, Quesnel, Prince George Peace River South and Fort Nelson LHAs are colored grey indicating that their rank lies somewhere in the middle. The Kitimat LHA is colored dark blue indicating that it ranks among the best in the province for this particular index.

The data was not sufficient to construct a ranking for the Snow Country, Telegraph Creek and Stikine Local Health Areas.

Summary Indices - British Columbia Socio-economic Indices ⁹⁰

Health Service Delivery Area	Local Health Area	LHA ranking on the Socio-economic Indices						
		Overall SEI	Economic Hardship	Education Concerns	Crime	Health Problems	Children At Risk	Youth At Risk
Northern BC								
Northwest	Queen Charlotte	12	28	6	6	9	7	22
	Prince Rupert	10	2	10	25	45	3	4
	Upper Skeena	8	1	1	54	21	1	6
	Smithers	41	29	49	50	42	25	42
	Kitimat	32	11	27	65	66	26	15
	Terrace	11	3	21	23	17	12	5
	Nisga'a	-	-	4	2	7	-	-
Northern Interior	Quesnel	16	12	20	37	43	17	19
	Burns Lake	14	18	3	34	16	13	13
	Nechako	9	6	18	20	12	9	14
	Prince George	15	14	32	9	34	24	10
Northeast	Peace River South	18	25	13	38	32	18	20
	Peace River North	36	59	26	24	24	48	47
	Fort Nelson	21	48	22	7	37	40	38
Interior Health								
East Kootenay	Fernie	57	68	34	59	39	50	61
	Cranbrook	47	43	40	58	36	21	37
	Kimberley	60	64	47	64	47	57	55
	Windermere	63	77	30	46	55	58	63
	Creston	44	50	28	51	33	34	48
	Golden	65	73	39	69	25	62	68
Kootenay Boundary	Kootenay Lake	45	20	42	74	30	31	72
	Nelson	66	40	61	73	70	68	52
	Castlegar	54	45	64	61	41	38	57
	Arrow Lakes	59	41	55	78	35	76	75
	Trail	61	61	69	71	13	53	64
	Grand Forks	37	32	36	52	26	27	58
	Kettle Valley	19	13	23	45	52	29	44
Okanagan	Southern Okanagan	33	39	29	44	22	51	30
	Penticton	31	27	63	40	20	20	35
	Keremeos	42	65	15	70	4	75	26
	Princeton	28	23	38	36	27	37	28
	Armstrong-Spallumcheen	67	62	46	68	68	70	62
	Vernon	43	44	50	30	40	35	27
	Central Okanagan	52	56	65	32	56	55	45
	Summerland	74	75	72	67	60	67	76
	Enderby	22	16	24	63	29	42	21
Thompson Cariboo	Revelstoke	71	71	59	72	59	44	71
	Salmon Arm	27	36	37	41	8	28	34
	Kamloops	40	34	53	31	50	30	29
	100 Mile House	30	54	11	33	23	46	32
	North Thompson	26	46	14	47	5	59	23
	Cariboo - Chilcotin	3	7	7	4	14	6	9
	Lillooet	6	9	9	11	10	10	8
	South Cariboo	13	24	2	22	15	8	11
	Merritt	5	4	12	5	18	11	7

Summary Indices - British Columbia Socio-economic Indices ⁹⁰

Health Service Delivery Area	Local Health Area	LHA ranking on the Socio-economic Indices						
		Overall SEI	Economic Hardship	Education Concerns	Crime	Health Problems	Children At Risk	Youth At Risk
Fraser Health								
Fraser East	Hope	2	5	25	1	2	4	3
	Chilliwack	24	30	45	8	48	41	12
	Abbotsford	46	42	54	18	62	56	46
	Mission	17	19	31	15	38	22	24
	Agassiz - Harrison	25	52	19	27	11	36	36
Fraser North	New Westminster	39	33	56	17	53	49	31
	Burnaby	51	38	71	12	76	60	53
	Maple Ridge	50	53	57	21	58	63	51
	Coquitlam	69	47	76	48	74	66	66
Fraser South	Langley	56	60	62	19	69	69	54
	Surrey	38	26	58	14	64	43	39
	Delta	72	57	75	66	73	72	70
Vancouver Coastal Health								
North Shore Coast Garibaldi	North Vancouver	75	67	77	62	75	73	74
	West Van-Bowen Island	77	74	78	77	77	77	77
	Sunshine Coast	58	51	60	56	61	39	43
	Powell River	35	22	35	55	46	32	18
	Howe Sound	64	72	66	29	54	65	65
	Bella Coola Valley	1	15	5	3	1	2	16
Richmond	Richmond	70	55	74	53	78	74	67
Vancouver	Vancouver	48	31	73	10	67	61	40
Vancouver Island Health								
South Vancouver Island	Greater Victoria	53	49	67	39	57	47	49
	Sooke	68	70	48	57	71	54	60
	Saanich	76	76	70	75	72	64	73
	Gulf Islands	73	69	68	76	65	71	69
	Cowichan	34	35	44	28	44	23	33
	Lake Cowichan	29	37	16	43	31	14	50
Central Vancouver Island	Ladysmith	49	63	41	49	19	33	41
	Nanaimo	23	17	43	26	49	16	17
	Qualicum	55	66	52	42	51	52	56
	Alberni	7	10	17	13	6	5	2
	Courtenay	62	58	51	60	63	45	59
North Van. Is.	Campbell R./ Van Is West	20	21	33	35	28	19	25
	Vancouver Island North	4	8	8	16	3	15	1

In the table above, each LHA is ranked from 1(worst score) to 78 (the best score) on each index.

To provide a quick summary, the LHAs have been grouped into 5 colored categories.

1, 2, 3... 76, 77, 78
Worst ranking	Second worst	Middle ranking	Second best	Best ranking

Personal Choices and Behavior - Injuries and Hospitalizations

Canadian hospitals spend more money caring for patients with injuries than for any other medical condition except for circulatory diseases. Nationally, hospital stays for injuries cost an average of \$9,400 each and account for 10% of total in-patient costs.⁹¹

Injuries requiring medical care and hospitalization occur across a lifespan and most can be avoided or lessened in their severity. These findings are well known by the BC Injury Research and Prevention Unit (BCIRPU): <http://www.injuryresearch.bc.ca>

What is the number one cause of injury related hospitalization?

Falls are the number one cause of injury hospitalization. The risk factors that underlie falls are different for each age group and so are the consequences for the people who experience a fall. For children, falls, stitches and broken arms are often accepted as part of growing up. For seniors, a fall can result in a profound loss of self confidence, social isolation, hospitalization, and even death. As a matter of fact, falls typically account for about 78% of the injury related deaths in Canadian seniors.⁹²

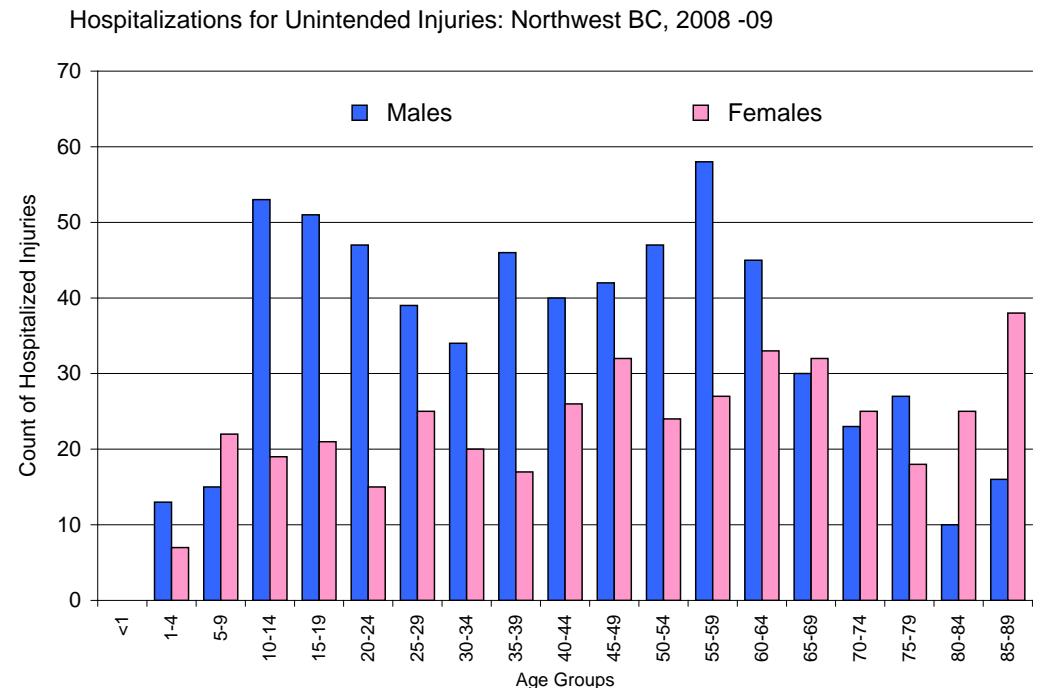
The table below, prepared by the BCIRPU, shows the leading causes of injury related hospitalization, by age group, for British Columbians during 2008 - 09.⁹³

BC INJURY research and prevention unit											
Leading Causes of Injury Hospitalization, British Columbia, 2008-09, Males and Females Combined											
	Counts (Crude hospitalization rate per 100,000)										
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Fall 42 (95.31)	Fall 251 (146.60)	Fall 494 (224.61)	Fall 497 (198.06)	Fall 1176 (176.36)	Fall 978 (169.81)	Fall 1220 (190.53)	Fall 1952 (277.96)	Fall 2472 (448.74)	Fall 12135 (1906.92)	Fall 21081 (481.13)
2	Assault 18 (40.85)	Foreign Body 109 (63.66)	Foreign Body 65 (29.55)	Struck by Object 233 (92.85)	Motor Vehicle Crash 785 (133.12)	Motor Vehicle Crash 664 (115.29)	Attempted Suicide 648 (101.20)	Motor Vehicle Crash 666 (94.84)	Motor Vehicle Crash 476 (86.41)	Motor Vehicle Crash 704 (110.63)	Motor Vehicle Crash 4065 (92.77)
3	Poisoning 15 (34.04)	Poisoning 74 (43.22)	Struck by Object 65 (29.55)	Non-MV Pedal Cycle 108 (43.04)	Struck by Object 746 (126.51)	Attempted Suicide 568 (98.62)	Motor Vehicle Crash 615 (96.04)	Attempted Suicide 610 (86.86)	Attempted Suicide 259 (47.02)	Unspecified factor 452 (71.03)	Attempted Suicide 3042 (69.43)
4	Other specified 14 (31.77)	Fire, Flame and Hot Substance 43 (25.11)	Non-MV Pedal Cycle 46 (20.91)	Motor Vehicle Crash 97 (38.65)	Attempted Suicide 710 (120.40)	Assault 497 (86.30)	Assault 427 (66.68)	Overexertion 336 (47.85)	Unspecified factor 202 (36.67)	Poisoning 308 (48.40)	Struck by Object 2478 (56.55)
5	Foreign Body 11 (24.96)	Environmental /Natural Factor 35 (20.44)	Motor Vehicle Crash 38 (17.28)	Attempted Suicide 66 (26.30)	Assault 683 (115.82)	Struck by Object 427 (74.14)	Overexertion 404 (63.09)	Assault 292 (41.58)	Overexertion 187 (33.95)	Foreign Body 213 (33.47)	Assault 2141 (48.86)
6	Unspecified factor 11 (24.96)	Struck by Object 31 (18.11)	Cutting and Piercing 35 (15.51)	Unspecified factor 58 (23.11)	Unspecified factor 259 (43.92)	Overexertion 276 (47.92)	Struck by Object 388 (60.59)	Struck by Object 274 (39.02)	Poisoning 175 (31.77)	Overexertion 183 (28.76)	Overexertion 1687 (38.50)
7	Suffocation 10 (22.69)	Unspecified factor 19 (11.10)	Unspecified factor 27 (12.28)	Off-road Vehicle 56 (22.32)	Overexertion 252 (42.73)	Cutting and Piercing 254 (44.10)	Cutting and Piercing 241 (37.64)	Poisoning 224 (31.90)	Struck by Object 140 (25.41)	Attempted Suicide 180 (28.29)	Unspecified factor 1593 (36.36)
8	Fire, Flame and Hot Substance 8 (18.15)	Motor Vehicle Crash 19 (11.10)	Off-road Vehicle 19 (8.64)	Overexertion 45 (17.93)	Cutting and Piercing 232 (39.34)	Non-MV Pedal Cycle 174 (30.21)	Poisoning 223 (34.83)	Unspecified factor 210 (29.90)	Cutting and Piercing 117 (21.24)	Struck by Object 171 (26.87)	Poisoning 1361 (31.06)
9	Struck by Object *	Suffocation 17 (9.93)	Other Transport 14 (6.37)	Assault 42 (16.74)	Off-road Vehicle 153 (25.95)	Unspecified factor 158 (27.43)	Unspecified factor 197 (30.77)	Cutting and Piercing 198 (28.19)	Non-MV Pedal Cycle 107 (19.42)	Sequelae of external causes 74 (11.63)	Cutting and Piercing 1196 (27.30)
10	Drowning /Submersion *	Non-MV Pedal Cycle 16 (9.34)	Sequelae of external causes 13 (5.91)	Cutting and Piercing 35 (13.95)	Poisoning 152 (25.78)	Poisoning 156 (27.09)	Non-MV Pedal Cycle 146 (22.80)	Undetermined intent 135 (19.22)	Foreign Body 100 (18.15)	Suffocation 73 (11.47)	Non-MV Pedal Cycle 896 (20.45)

* Suppressed due to small numbers of cases or cell sizes of zero. Postoperative Complications, Misadventure and Adverse Effects have been excluded from these tables due to their heterogeneous nature.
Source: Hospital Discharge Abstract Database, BC Ministry of Health Services, 2010

Personal Choices and Behavior - Injuries and Hospitalizations

The graph and table below show the count of hospitalizations for unintended injuries in Northwest Health Service Delivery Area residents during 2008 - 09.⁹⁴



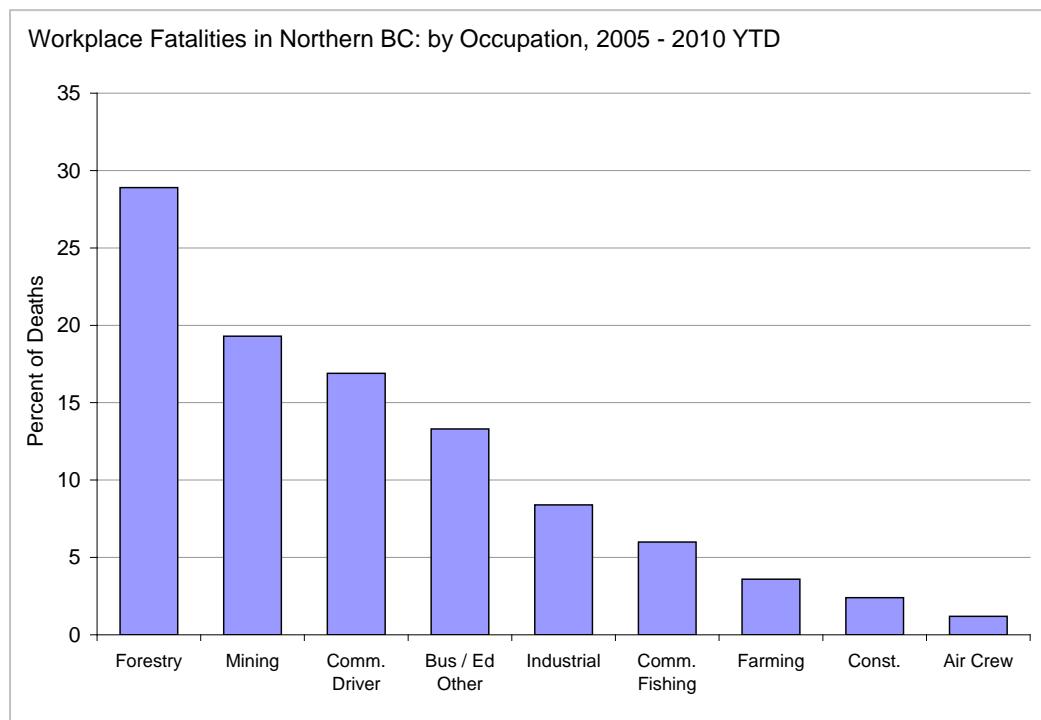
Age Groups	Unintended Injuries		Days in Hospital		Northwest Health Service Delivery Area Direct Care Costs for One Year (2008-09) ⁹⁵		
	M	F	M	F	Males	Females	Total
<1	< 5	<5	24	16	\$78,577.63	\$9,032.13	\$87,609.76
1 - 4	13	7	13	7	\$26,676.87	\$12,417.73	\$39,094.60
5 - 9	15	22	47	9	\$73,280.95	\$30,593.75	\$103,874.70
10 - 14	53	19	40	8	\$121,769.05	\$34,409.38	\$156,178.43
15 - 19	51	21	103	16	\$180,732.22	\$43,031.53	\$223,763.75
20 - 24	47	15	59	30	\$116,234.80	\$42,969.88	\$159,204.68
25 - 29	39	25	128	33	\$186,214.34	\$84,803.54	\$271,017.88
30 - 34	34	20	50	84	\$115,598.77	\$96,099.09	\$211,697.86
35 - 39	46	17	144	99	\$189,974.85	\$82,982.68	\$272,957.53
40 - 44	40	26	82	131	\$162,524.12	\$104,546.81	\$267,070.93
45 - 49	42	32	150	341	\$215,970.59	\$302,384.49	\$518,355.08
50 - 54	47	24	142	143	\$192,747.49	\$128,921.67	\$321,669.16
55 - 59	58	27	439	90	\$412,150.79	\$95,538.24	\$507,689.03
60 - 64	45	33	252	142	\$235,715.86	\$142,511.71	\$378,227.57
65 - 69	30	32	216	364	\$249,600.61	\$285,463.97	\$535,064.58
70 - 74	23	25	129	100	\$127,673.68	\$86,896.05	\$214,569.73
75 - 79	27	18	209	109	\$234,216.77	\$97,049.36	\$331,266.13
80 - 84	10	25	392	164	\$283,486.74	\$145,625.66	\$429,112.40
85 - 89	16	38	184	677	\$164,323.43	\$513,970.58	\$678,294.01
Total	636	426	2803	2563	\$3,367,469.56	\$2,339,248.25	\$5,706,717.81

Direct Care costs are calculated using the RIW for each case. The above estimates are for the direct care costs only.
Source: Discharge Abstract Database (DAD) 2008-09, BC Ministry of Health. Accessed through the BC Injury Research and Prevention Unit; Online Data-tool. July 2010. <http://www.injuryresearch.bc.ca/>

Personal Choices and Behavior - Workplace Fatalities ⁹⁶

Between 2005 and 2010, there were 83 workplace fatalities in northern B.C. that were classified as accidental. These accidental workplace fatalities accounted for 21.3 % of all the workplace fatalities in British Columbia. During this time-period:

- Northern BC was home to less than 7 % of the BC population.
- Male workers accounted for 81/83 of the workplace fatalities.
- The average age of the deceased was 46.6 years.



Accidental Workplace Fatalities in Northern BC: by Occupation, 2005 – 2010 YTD ⁹⁷

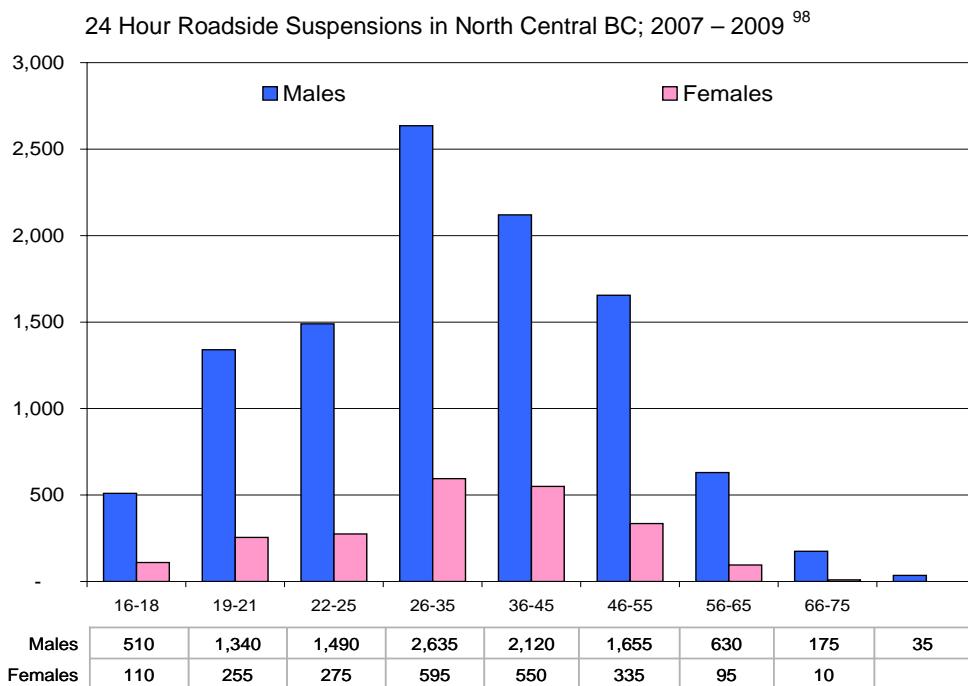
Occupation Group	2005	2006	2007	2008	2009	2010	Deaths	%
Forestry	11	4	4	3	1	1	24	28.9
Mining	3	4	1	7	0	1	16	19.3
Commercial Driver	5	5	0	2	1	1	14	16.9
Business Ed.& Other	2	1	5	0	1	2	11	13.3
Industrial	2	2	1	1	1	0	7	8.4
Commercial Fishing	1	1	1	2	0	0	5	6.0
Farming	1	0	1	1	0	0	3	3.6
Construction	1	0	0	1	0	0	2	2.4
Air Pilot / Crew	0	1	0	0	0	0	1	1.2
Total	26	18	13	17	4	5	83	100

Source: BC Coroners Service; Special request for Northern Health. November 2010.

Personal Choices and Behavior - Driving under the Influence

The Road-Health coalition was formed over five years ago in an effort to reduce the deaths and injuries that were occurring on our northern highways and resource roads.

The data below, provided by the Road-Health partners, indicates that driving while under the influence of alcohol and drugs remains a problem in northern BC.



Source: ICBC, Business Information Warehouse. Special request for Northern Health. January 2010.

Substance use as a contributing factor to fatal MVIs in northern BC ⁹⁹					
Year	Alcohol	Drugs	Alcohol & Drugs	Total	
2004	18	3	1	22	
2005	17	5	3	25	
2006	17	1	3	21	
2007	14	10	7	31	
2008	6	6	5	17	
Total	72	25	19	116	

Substances detected by the BC Coroners Service included marijuana, cocaine, ecstasy, and crystal meth, and a variety of prescription medications including narcotic analgesics and sedatives.

Source: BC Coroners Service; Special request for Northern Health. March 2010.



Personal Choices and Behavior - Tobacco Sales to Minors

Tobacco-related illness is the leading cause of preventable death in BC.¹⁰⁰

Youth are particularly susceptible to becoming addicted. Consequently, the sale of tobacco products to minors is restricted under the provincial *Tobacco Control Act* and the federal *Tobacco Act* and regulations.

In British Columbia, a minor is anyone under the age of 19 years.

Tobacco Retailer Violation Report: Northern BC 2008- 09 ¹⁰¹

Tobacco retailers' Local Health Area	Number of		Violation Notes
	Retailers	Violations	
Haida Gwaii	22	4	All violations: sales to minors
Snow Country	10	0	No violations
Prince Rupert	44	11	10 sales to minors, 1 advertising
Upper Skeena	17	5	All violations: sales to minors
Smithers	38	4	2 sales to minors, 2 retail display
Kitimat	24	5	All violations: sales to minors
Terrace	42	18	All violations: sales to minors
Nisga'a	12	1	All violations: sales to minors
Stikine / Telegraph Creek	10	1	All violations: sales to minors
Misc. construction camps	5	0	No violations
Northwest HSDA	224	49	45 / 49 violations: sales to minors
Quesnel LHA	46	5	4 sales to minors, 1 retail display
Burns Lake	16	4	All violations: sales to minors
Nechako	34	17	All violations: sales to minors
Prince George	149	19	All violations: sales to minors
Northern Interior HSDA	245	45	44 / 45 violations: sales to minors
Peace River South	45	39	12 sales to minors, 27 retail display
Peace River North	46	16	16 display signs / smoke free area
Fort Nelson	24	22	6 sales to minors, 16 retail display
Northeast HSDA Total	119	81	18 / 81 violations: sales to minors
Northern Health Total	588	175	107 /175 violations: sales to minors

During 2008-09, tobacco enforcement officers issued 175 violation notices to retailers in northern BC. Most of these notices resulted from the sale of tobacco to minors.¹⁰²

For additional information on the Tobacco Control Act, regulations and enforcement; BC Ministry of Health Services <http://www.health.gov.bc.ca/tobacco/>

Personal Choices and Behavior - Alcohol and Other Drug Use

The problematic use of alcohol, tobacco and other drugs leads to substantial health and social costs for British Columbians.^{103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116}

The Centre for Addictions Research of BC (CARBC) worked with Northern Health to provide estimates of the hospitalizations and deaths, where alcohol, tobacco or illicit drug use was a direct cause or contributing factor. This body of work was based upon the concept and methodology of attributable-fractions.¹¹⁷ Here is a summary.

Alcohol

In 2008, of all BC residents, persons residing in Northern BC had the highest estimated rate of acute care hospitalizations for conditions related to the use of alcohol (674 hospitalizations per 100,000 persons). In 2008, there were approximately 1800 hospitalizations where alcohol was a direct cause or contributing factor.¹¹⁸

Tobacco

In 2008, of all BC residents, persons residing in Northern BC had the highest rate of acute care hospitalizations for conditions related to tobacco (791 per 100,000 persons). In 2008, there were approximately 2100 hospitalizations where tobacco use was a direct cause or contributing factor.¹¹⁹

Illicit Drugs

In 2008, of all BC residents, persons residing in Northern BC had the highest rate of hospitalization for conditions related to illicit drugs (148 per 100,000 persons). In 2008, there were approximately 396 hospitalizations where illicit drug use was a direct cause or contributing factor.¹²⁰

Substance Use, Gender (Sex), Hospitalizations and Deaths

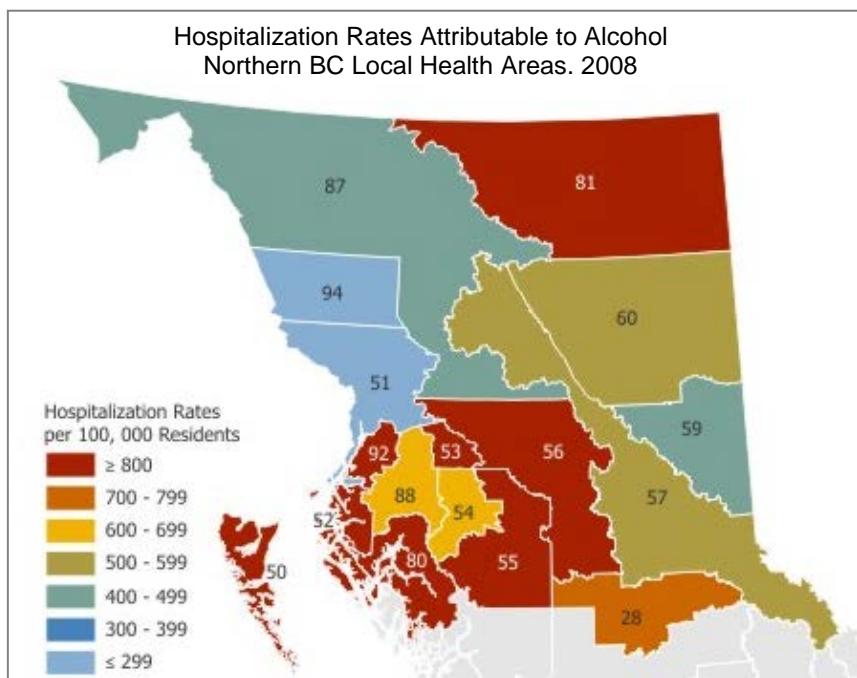
In 2008, northern BC residents had the highest rates of alcohol and tobacco related deaths in BC, and the lowest mortality attributable to illicit drugs. Except for the hospitalizations related to illicit drugs, males consistently outnumbered females in hospitalizations and deaths, by a ratio of approximately 2 to 1.^{121, 122}

The Centre for Addictions Research of BC (CARBC) is a provincial research network hosted by the University of Victoria in collaboration with Simon Fraser University, Thompson Rivers University, the University of British Columbia and the University of Northern British Columbia.

The CARBC works closely with multiple sectors, including health, child and family services, justice, education, public safety and liquor licensing to ensure the best available evidence is considered in policy-making processes. Centre for Addictions Research of BC: <http://carbc.ca/>

Personal Choices and Behavior - Alcohol

In 2008, Northern residents had the highest rates of hospitalization for conditions related to the use of alcohol. The greatest number of hospitalizations occurred in Prince George. The highest rates were experienced in Haida Gwaii and Fort Nelson.



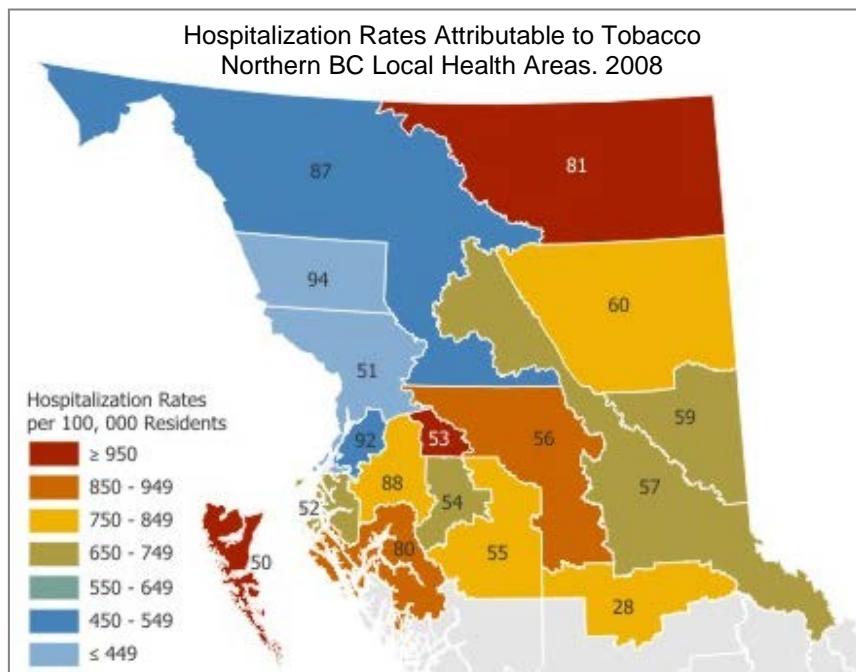
Local Health Area	Alcohol		Tobacco		Illicit Drugs	
	Count	Rate	Count	Rate	Count	Rate
050 Haida Gwaii	88	1735.5	59	1175.2	20	425.7
052 Prince Rupert	116	852.8	99	750.0	26	197.2
053 Upper Skeena	78	1563.6	59	1252.9	7	176.6
054 Smithers	91	621.1	104	723.0	18	110.5
080 Kitimat	104	980.3	99	906.4	15	135.1
088 Terrace	124	625.9	158	778.7	22	113.8
092 Nisga'a	21	1142.5	--	503.8	--	129.9
028 Quesnel	166	707.5	209	807.6	80	393.9
055 Burns Lake	66	923.2	61	808.8	0	74.7
056 Nechako	141	1012.5	135	885.6	19	135.4
057 Prince George	475	513.4	673	734.1	102	104.6
059 Peace River South	116	434.4	184	719.4	22	82.0
060 Peace River North	156	537.7	201	801.5	33	97.5
081 Fort Nelson	94	1520.5	48	1709.5	32	587.6
Northern BC Total	1836	674	2096	791.0	396	148.0

Source: CARBC: Alcohol and Other Drug Monitoring Project: 2010. www.AODmonitoring.ca

Rates shown above are age and sex standardized.

Personal Choices and Behavior - Tobacco

In 2008, Northern residents had the highest rates of hospitalization for conditions related to the use of tobacco. The greatest number of hospitalizations occurred in Prince George. The highest rates were experienced in Fort Nelson and Upper Skeena.



Hospitalization Counts and Rates Attributable to Substance Use: 2008 ¹²⁴

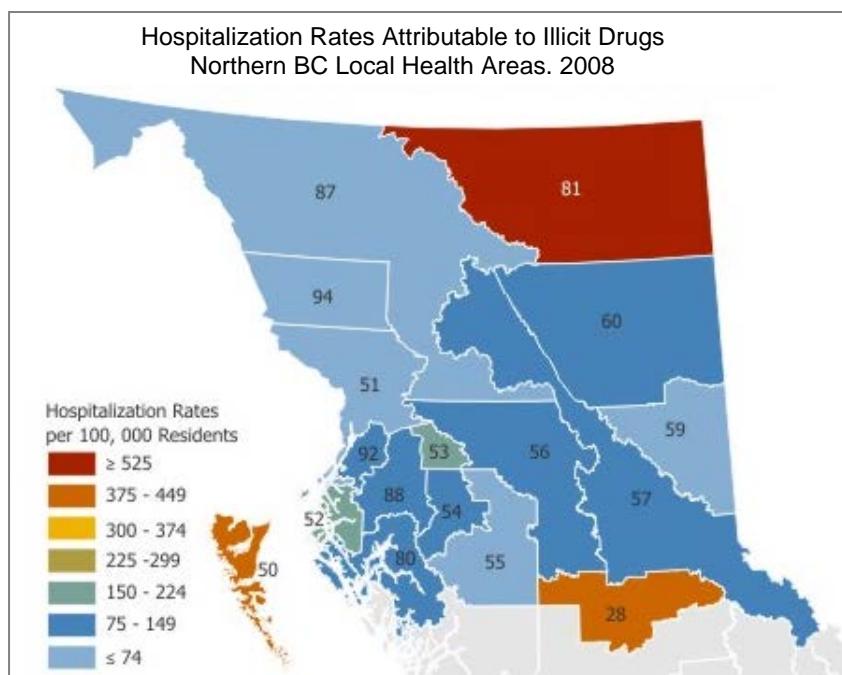
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055 Burns Lake	66	923.2	61	808.8	0	74.7
056 Nechako	141	1012.5	135	885.6	19	135.4
057 Prince George	475	513.4	673	734.1	102	104.6
059 Peace River South	116	434.4	184	719.4	22	82.0
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Personal Choices and Behavior - Illicit Drugs

In 2008, Northern residents had the highest rates of hospitalization for conditions related to the use of illicit drugs. The greatest number of hospitalizations occurred in Prince George. The highest rates were experienced in Fort Nelson and Haida Gwaii.



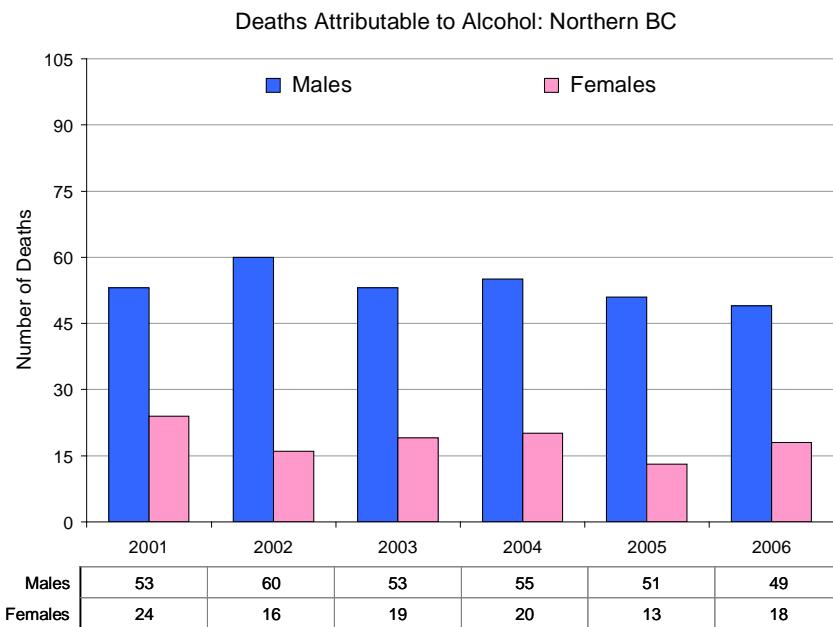
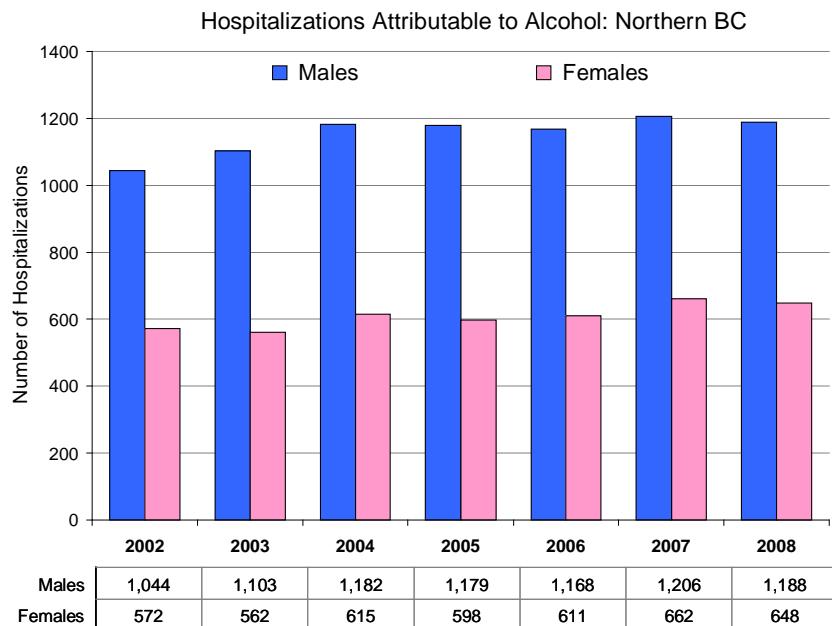
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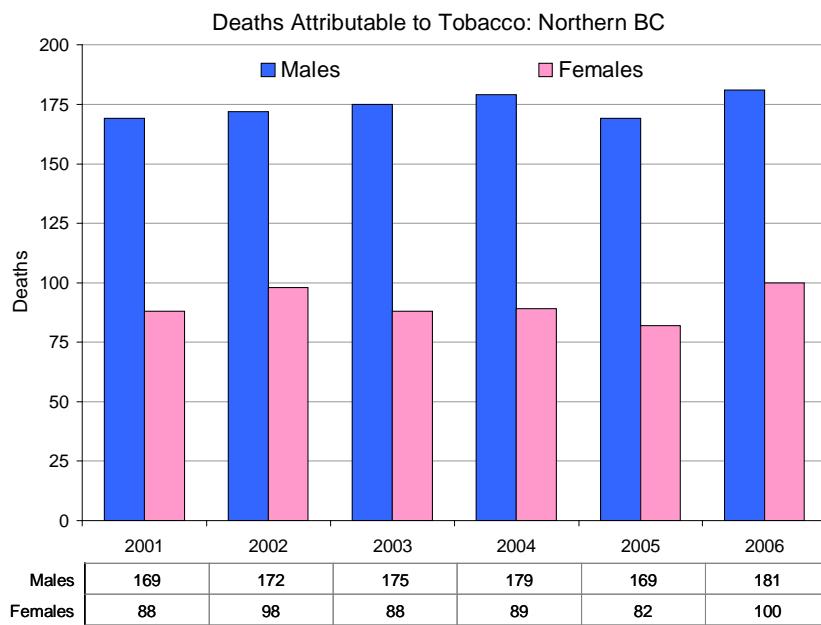
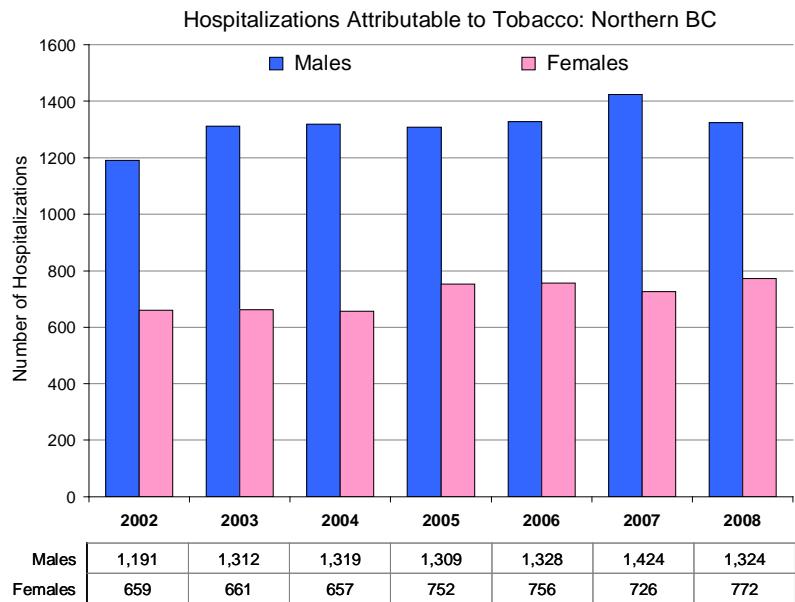
Personal Choices and Behavior - Alcohol

Northern BC residents have the highest rates of alcohol related hospitalizations and deaths in the province. The graphs below show the sex differences.^{126, 127}



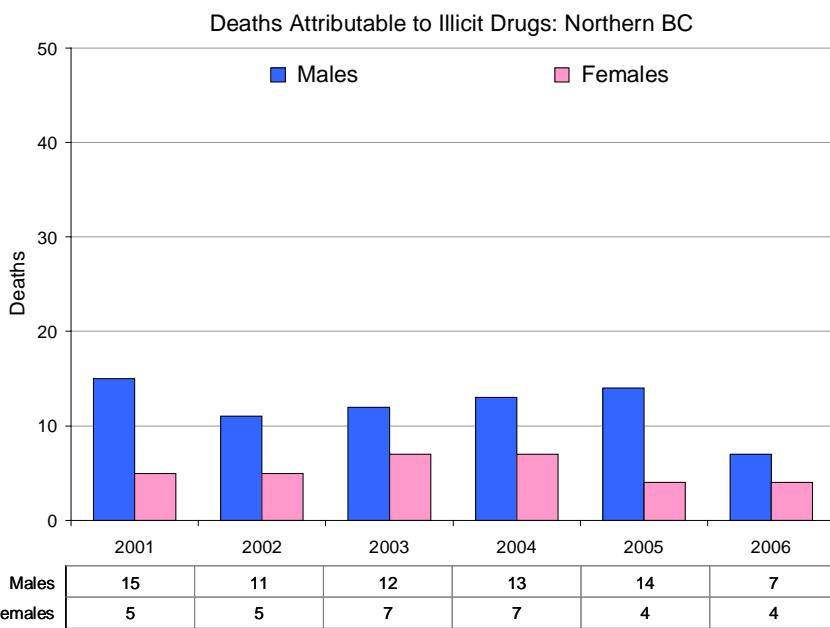
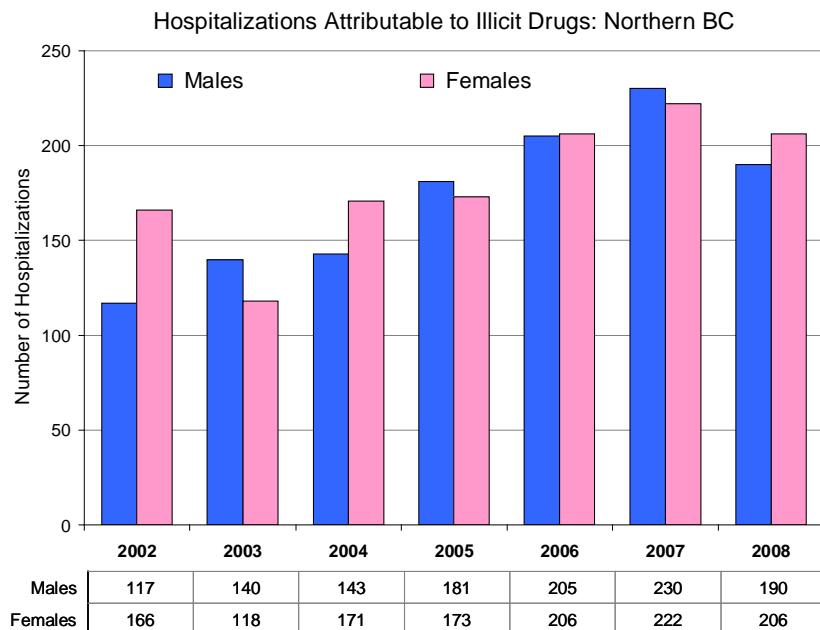
Personal Choices and Behavior - Tobacco

Northern BC residents have the highest rates of tobacco related hospitalizations and deaths in the province. The graphs below show the sex differences.^{128, 129}



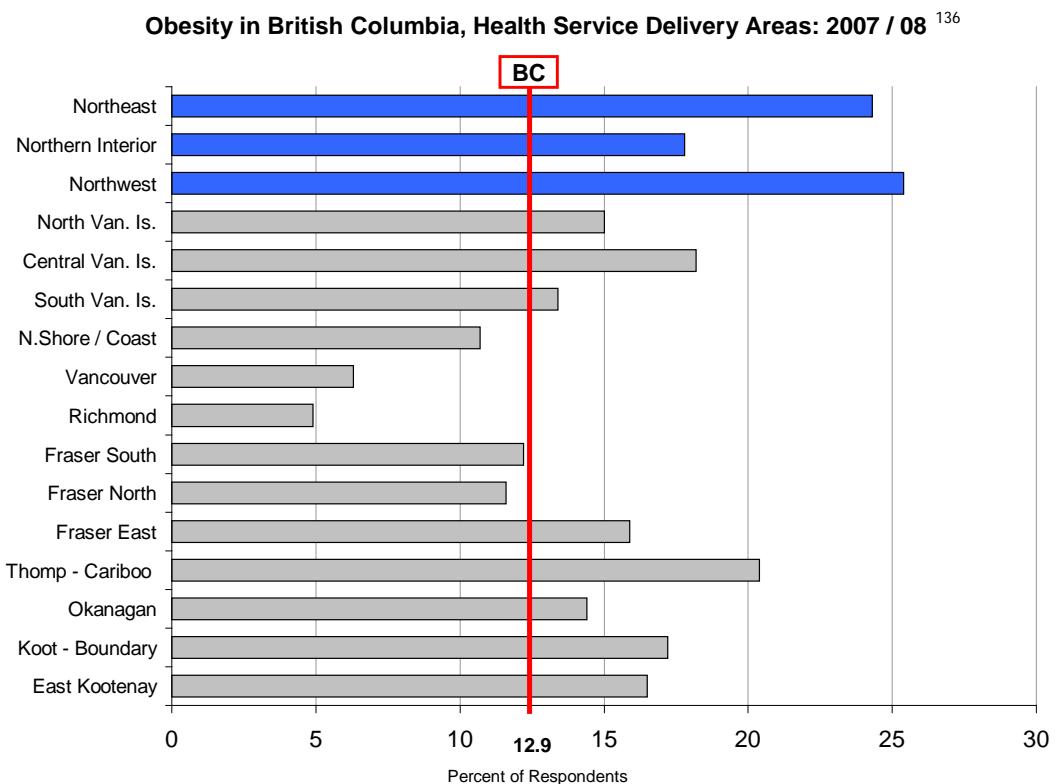
Personal Choices and Behavior - Illicit Drugs

Northern BC residents have the highest rates of illicit drug related hospitalizations and the lowest mortality. The graphs below show the sex differences.^{130, 131}



Personal Choices and Behavior - Physical Inactivity and Obesity

Physical inactivity and obesity are implicated in heart disease, diabetes, hypertension, osteoarthritis, certain cancers, and a wide range of other illnesses. Obese people are four times more likely to have diabetes, three times more likely to have hypertension and 56% more likely to have heart disease than those with healthy weights. ^{132, 133, 134, 135}



The Body mass index (BMI) is a simple, widely accepted method of assessing body weight in relation to health risk for most people aged 20 - 65. There are exceptions including people who are muscular, athletes and pregnant or nursing women. ^{137, 138, 139}

Persons with a BMI greater than 30 are considered obese. ¹⁴⁰

During 2007 /08, up to 25 % of northerners reported that their BMI was greater than 30. This suggests that many of us have increased weight related health risks. By comparison, only 12.9% of BC residents reported having a BMI greater than 30. ¹⁴¹

Did you know...

In 2006, it was estimated that obesity and physical inactivity cost the BC economy more than \$1 billion annually. By 2015, this figure is projected to grow to \$1.85 billion per year. Approximately 40% of these costs are direct health care costs. ¹⁴²

Health Status



Summary Measures of Health Status

A few good indicators can quickly paint the picture of health and well-being in a local community, health area, province or country. The table below has a few examples.

Summary Measures of Health ¹⁴³	Haida Gwaii LHA	Northern BC	BC Overall
Average age of population	38.0 years	36.6 years	39.9 years
Life Expectancy at birth	79.0 years	78.7 years	81.1 years
Total Fertility Rate (per 1,000 women) ¹⁴⁴	1,850.0	1,908.0	1,502.0
Infant Mortality Rate (per 1,000 live births)	7.55	4.71	4.13
Standardized Mortality Ratio (all causes)	1.22 *	1.22 *	1.00
Potential Years of life Lost Index (all causes)	1.27	1.25 *	1.00

** indicates that the SMR or PYLLI value is statistically significant.*

Life Expectancy at birth is used globally as a basic indicator of the extent to which people are able to live a long life, are healthy, have adequate food and access to health care, and are protected from disease and other threats that would shorten life span.¹⁴⁵ The most significant factor contributing to increased life expectancy over the past 60 years has been the improvement in infant and early childhood survival. This improved survival is a direct result of having clean drinking water, sanitation and the effective control of infectious diseases.^{146, 147, 148}

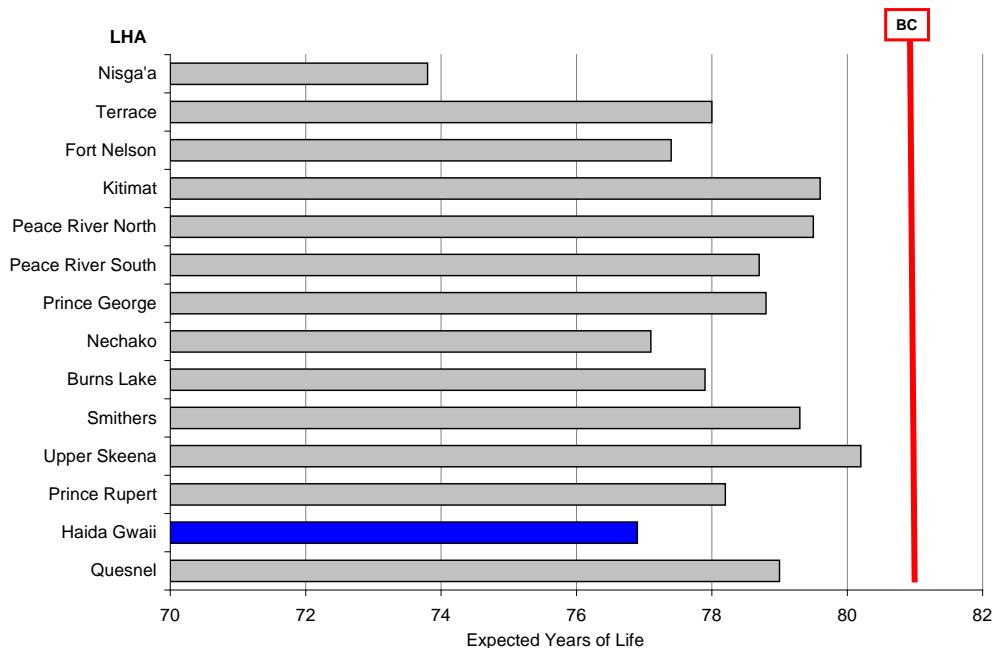
Total Fertility Rate (TFR) tells us how many children 1,000 women might have during their child-bearing years. The TFR helps us ascertain whether the number of children being born in an area, is sufficient to replace the population that is being lost through deaths and out-migration.¹⁴⁹

Infant Mortality Rate is a measure of child health and the social well-being of society. It refers to the number of babies who die in the first year of life, expressed as a rate per 1,000 live births. A low rate reflects a healthy population, with good care paid to the health of mothers and children. Low birth weight is now the principal risk factor associated with infant mortality, particularly for infants between 28 to 365 days old.¹⁵⁰

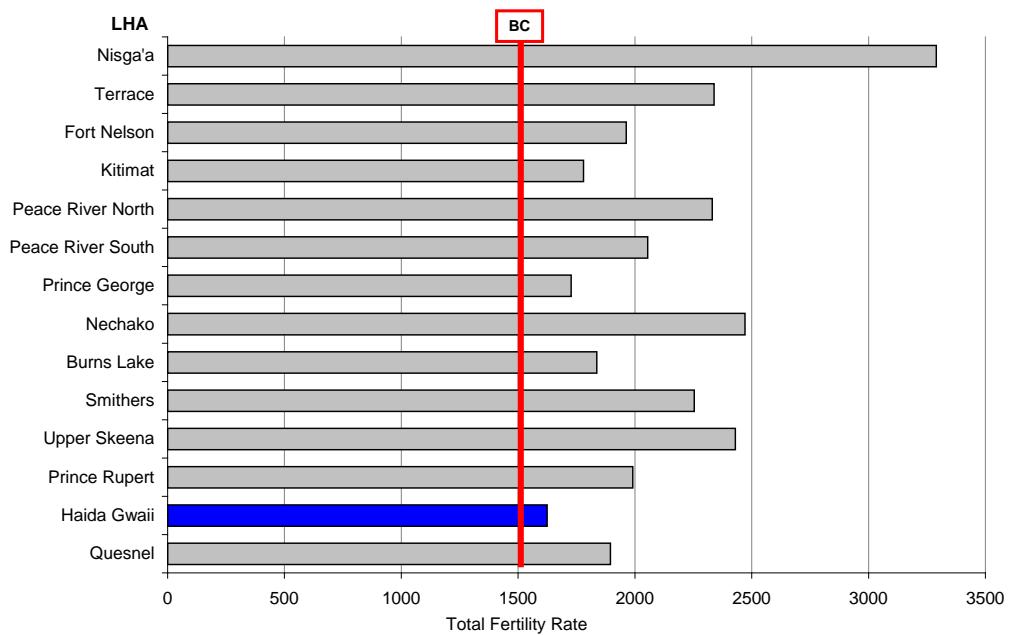
Standardized Mortality Ratio is an internationally recognized health status indicator. It is an effective measure for comparing mortality that is based on a small number of cases or geographic areas and is a tool that is well-suited for northern BC.

Potential Years of Life Lost: Deaths before the age of 75 years are considered premature. We express premature deaths in terms of the Potential Years of Life Lost (PYLL). A death at age 70 has five PYLL and a death at age 65 has 10 PYLL. To make comparisons possible, we use the PYLL Index or the PYLL Standardized Rate.¹⁵¹

Life Expectancy at Birth: 2005 - 2009

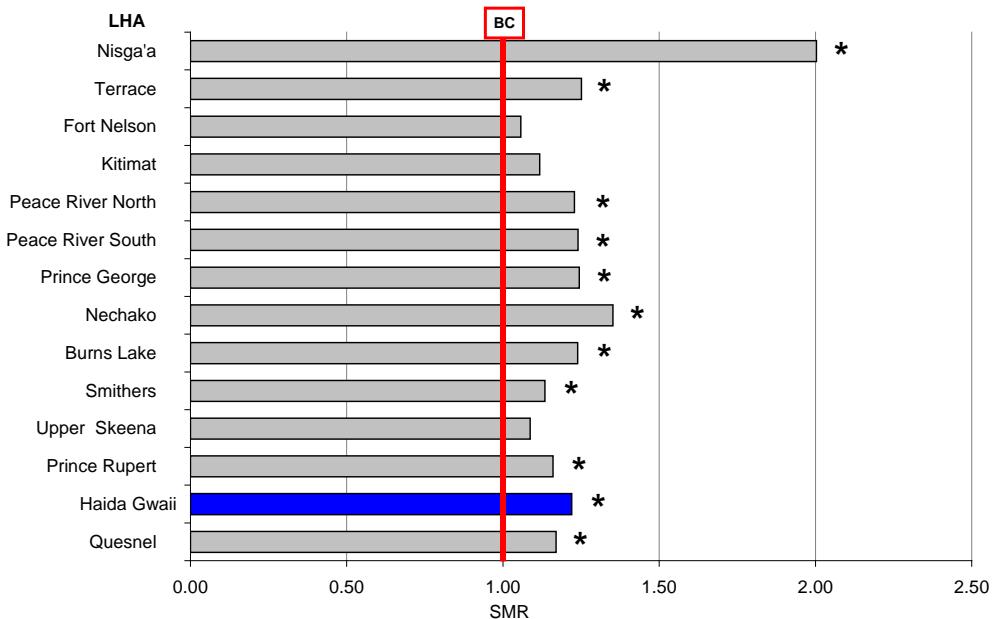


Total Fertility Rate (TFR) per 1000 women ages 15 - 49: 2009

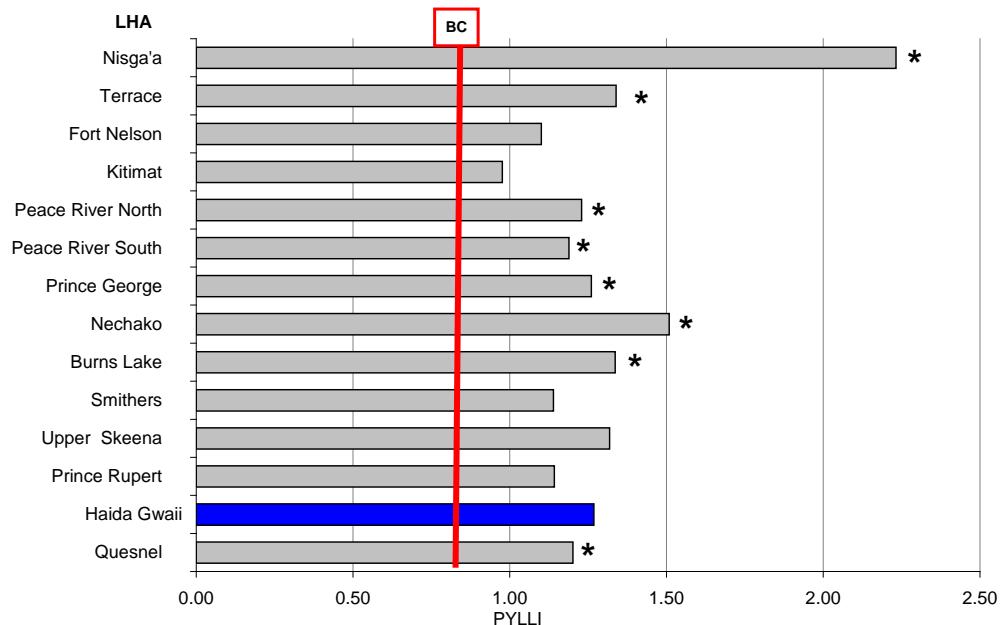


Data Source: Life Expectancy at Birth: BC Stats. 2010. <http://www.bcstats.gov.bc.ca/data/pop/pop/dynamic/lifeexpectancy.asp>
Data Source: Total Fertility Rates: BC Stats, Vital Measures. 2010. <http://www.bcstats.gov.bc.ca/data/pop/vital.asp>

Standardized Mortality Ratio (SMR) - All Causes of Death: 2003 - 2007



Potential Years Life Lost Index (PYLLI) - All Causes of Death: 2003 - 2007



SMR or PYLLI greater than 1.00 indicate that more deaths or premature mortality is occurring than expected.

* symbol indicates that the SMR or PYLLI value shown is both elevated and statistically significant.

Data source: Standardized Mortality Ratio and Potential Years of Life Lost Index: All causes. BC Vital Statistics Annual Report: 2007.
<http://www.vs.gov.bc.ca/stats/annual/index.html>

Birth Summaries

During the 2004/05 -2009/09 period (5 five years), 229 mothers from the Haida-Gwaii Local Health Area delivered 233 newborns. These births are summarized below.

Mothers - Summary Indicators ¹⁵²	Haida Gwaii LHA		BC Overall	
	Number	%	Number	%
Total number of mothers	229	100	209,415	100
Cesarean section deliveries	59	25.8	62,900	30.0
Births to women ages \leq 19 yrs (teen moms)	17	7.4	7,273	3.5
Births to women ages > 35 (elderly gravida)	27	11.8	34,655	16.5
Mothers who smoked during pregnancy	38	16.6	21,739	10.4

Newborns - Summary Indicators ¹⁵³	Haida Gwaii LHA		BC Overall	
	Number	%	Number	%
Total Number of Newborns	233	100	212,716	100
Total Number of Live Births	232	99.6	211,689	99.5
Preterm Births	26	11.2	19,945	9.4
Low Birth-weight (< 2500 grams)	13	5.6	12,375	5.8
Small for Gestational Age (SGA)	6	2.6	14,805	7.0
High Birth-weight (> 4000 grams)	46	19.7	26,549	12.5
Large for Gestational Age (LGA)	57	24.5	27,305	12.8

Source: Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 – March 31, 2009.
Prepared for Northern Health by BC Perinatal Health Program. September 28, 2010. BC. Request No. 2010-040.

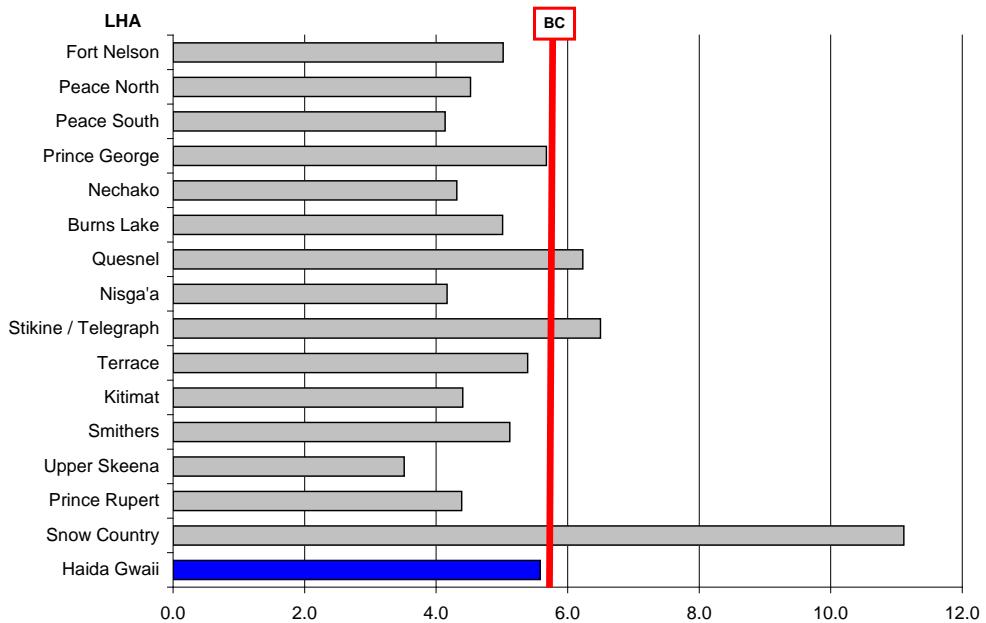
Low birth weight is now the principal risk factor associated with infant mortality, particularly between the ages of 28 to 365 days. Maternal factors associated with low birth weight include smoking, poor diet during pregnancy, low weight prior to pregnancy, poverty and pregnancy in very young or very old mothers.¹⁵⁴

High birth weight pregnancies and deliveries tend to have higher rates of complications due to diabetes, disproportion and obstructed labour. Difficult or prolonged childbirth, shoulder dystocia and asphyxia in the infant are delivery complications that are closely associated with delivering high birth weight babies.¹⁵⁵

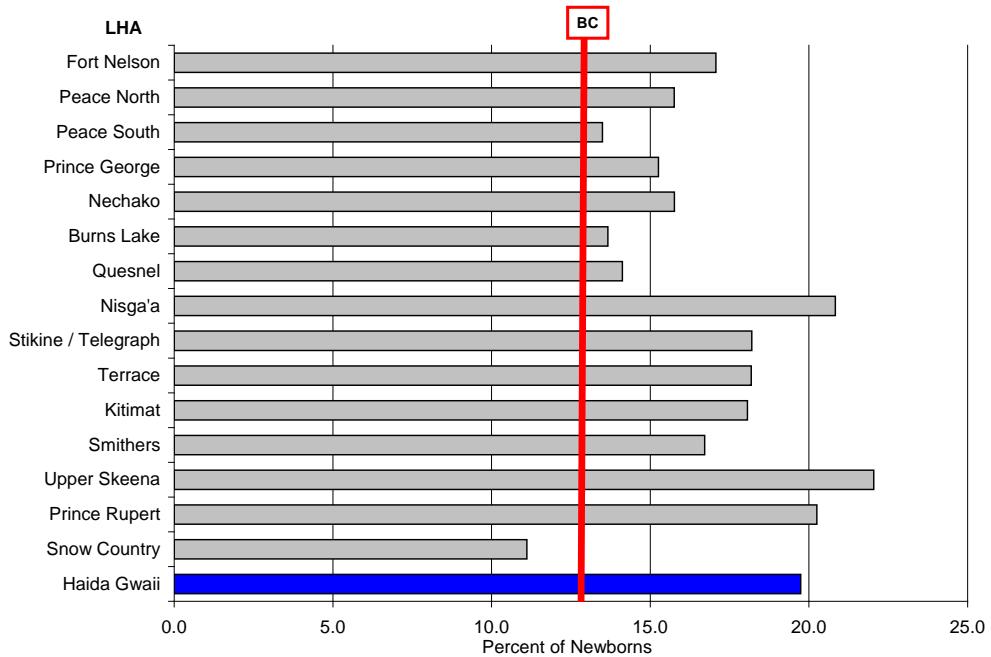
Births to teen moms is an indicator that can provide information about the effectiveness of sexuality education, contraception and other services for this age group, as it is assumed that most pregnancies among teens are unintended.¹⁵⁶ Northerners have some of the highest teen pregnancy and teen birth rates in B.C.¹⁵⁷

Mothers who smoke during pregnancy or who are exposed to second-hand smoke may have adverse pregnancy outcomes, including increased risk of preterm birth, stillbirth, low birth weight, and placental abruption.¹⁵⁸ Northerners have the highest rates of mothers who smoke during pregnancy in B.C.¹⁵⁹

Low Birthweight Infants (Less than 2500 grams): 2004 - 2009

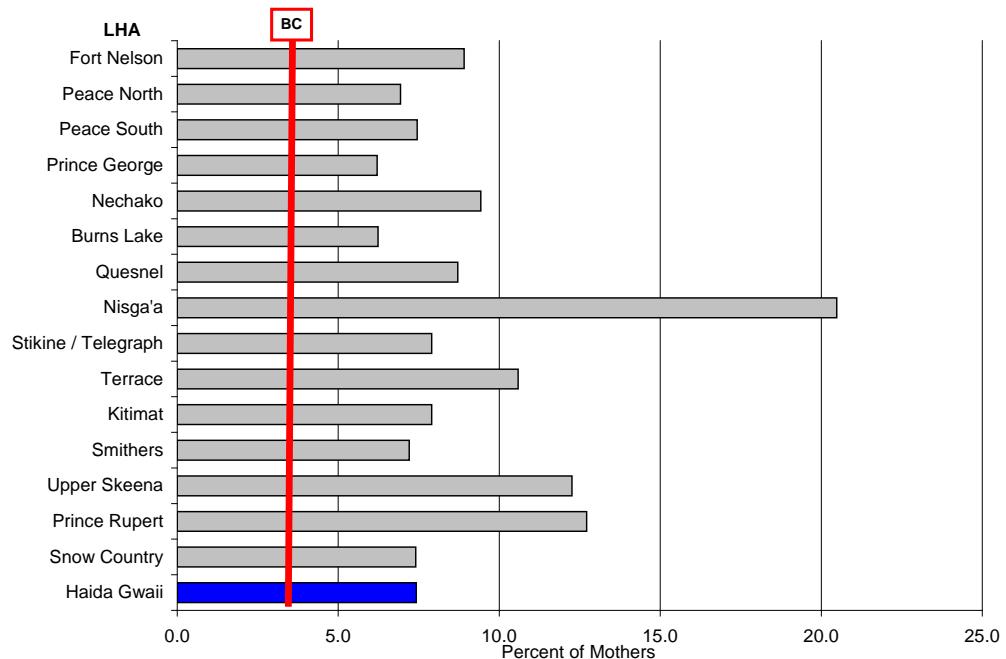


High Birthweight Infants (Greater than 4000 grams): 2004 - 2009

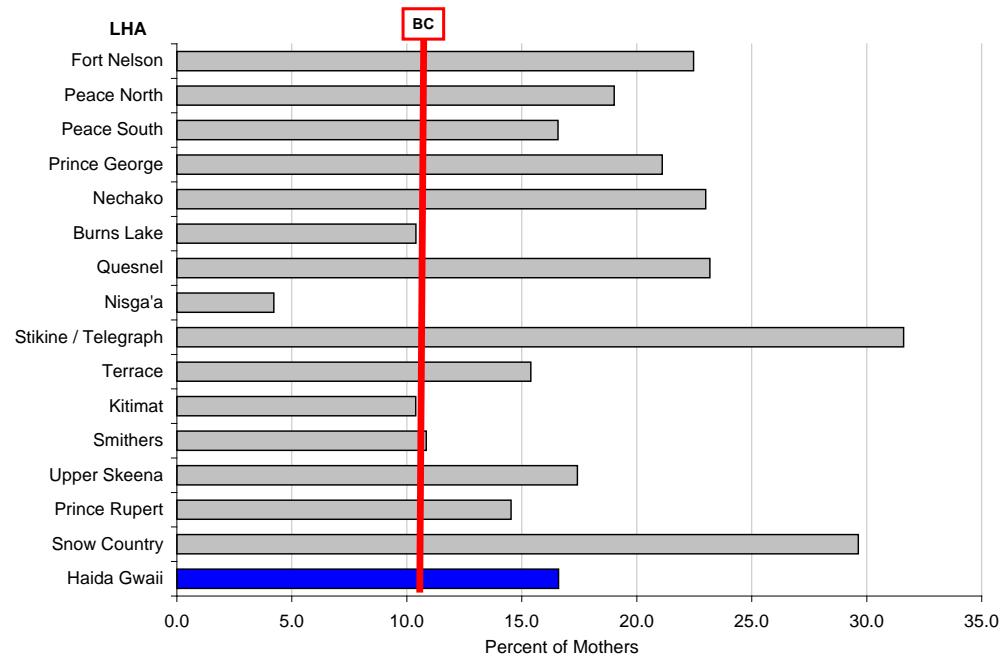


Source: Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 - March 31, 2009.
Prepared for Northern Health by BC Perinatal Health Program. September 28, 2010. Request No. 2010-040.

Teen Moms: Births to Mothers ages \leq 19 years: 2004 - 2009



Mothers who Smoked during Pregnancy: 2004 - 2009



Source: Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 - March 31, 2009.
Prepared for Northern Health by BC Perinatal Health Program. September 28, 2010. Request No. 2010-040.

Birth Summaries - Where Mothers Delivered their Infants

From the 2004/05 -2008/09, 229 mothers from the Haida-Gwaii LHA delivered 233 newborns. The summary table below shows where these mothers lived and where they delivered their babies during this five-year period.

Mother's community or regional district area	Mother's Delivery Location: 2004 – 2009 ¹⁶⁰					
	Prince Rupert	Haida Gwaii	Terrace	Other BC Location	Home Births	Total Mothers
Masset	56	8	2	28	3	97
Port Clements	7	3	2	2	0	14
Skeena QC RD (D)	2	0	0	3	0	5
Skeena QC RD (E)	1	3	0	12	0	16
Skeena QC RD (F) *	16	15	1	13	0	45
Skidegate	22	20	0	9	1	52
Total Mothers	104	49	5	67	4	229

Source: Northern Health Resident Mothers that Delivered a Baby in British Columbia, by Resident Municipality, April 01, 2004 – March 31, 2009.
Prepared for Northern Health by BC Perinatal Health Program. September 27, 2010. Request No. 2010-040. Update to 2008078 and 2009018.

We use the above information to plan and deliver services to new and expecting mothers, such as prenatal education and post-delivery follow-up supports. This information also informs the services for infants and children such as immunizations and screening for potential vision, hearing and dental health problems.

The Prince Rupert Regional Hospital is a destination for many mothers who reside in isolated west coast communities. Of the births in the Prince Rupert between 2004/05 and 2008/09: 104 were to mothers from Haida Gwaii; 64 births were to mothers from

Lax Kw'alaams; 26 births were to mothers from the Gitxaala Nation (Kitkatla) located on Dolphin Island; and, 21 births were to mothers from Gitga'at Nation (Hartley Bay), located at Txalgiu / Kulkayu

Skeena Queen Charlotte (F) is also known as Queen Charlotte City (Village).

Reference maps are contained in the Appendices section of this report.

Reference maps are also available directly from BC Stats:

<http://www.bccstats.gov.bc.ca/data/pop/maps/reference.asp>

Leading Causes of Death

We assign deaths to broad categories using the International Classification of Diseases (ICD) system that was developed by the [World Health Organization](#). In the tables below, we have shown the leading causes of death according to broad ICD categories.

Leading Causes of Death ¹⁶¹

Haida Gwaii LHA: 2003 – 2007		British Columbia: 2003 – 2007	
Category of Death	% of Deaths	Category of Death	% of Deaths
All cancers	26.1 %	Circulatory system	32.2 %
Circulatory system	22.5 %	All cancers	28.0 %
Alcohol-related	21.1 %	Respiratory system	10.6 %
Respiratory system	9.9 %	Alcohol related	6.6 %
Endocrine & metabolic	4.2 %	Endocrine & metabolic	4.2 %
Subtotal	83.8 %	Subtotal	81.6 %

Details on Leading Causes of Death ¹⁶²

Haida Gwaii: 2003 – 2007	Deaths		SMR	PYLLI
	Percent	Number		
All causes of death	100.0 %	142	1.22 *	1.27
All cancers	26.1 %	37	1.05	0.89
Lung cancer	11.3 %	16	1.73	1.76
Circulatory system diseases	22.5 %	32	0.96	1.19
Ischemic heart disease	10.6 %	15	0.94	1.04
Cerebrovascular / stroke	5.6 %	8	1.08	2.13
Arteries and capillaries	2.1 %	3	1.29	2.65
Alcohol related deaths	21.1 %	30	2.87 *	2.48 *
Respiratory system diseases	9.9 %	14	1.33	2.40
Pneumonia / influenza	3.5 %	5	1.20	3.05
Chronic Pulmonary (COPD)	4.2 %	6	1.40	2.31
Endocrine and metabolic	4.2 %	6	1.25	1.13
Diabetes	3.5 %	5	1.33	0.80
Digestive system diseases	3.5 %	5	1.02	0.49
Suicide	3.5 %	5	1.89	1.83
Motor Vehicle Incidents	2.1 %	3	1.32	0.97
SMR = Standardized Mortality Ratio		PYLLI = Potential Years of Life Lost Index		
SMR (deaths) or PYLLI (premature mortality) values greater than 1.00 indicate that more deaths or premature mortality are occurring than expected. An * indicates that the SMR or PYLLI value, is statistically significant.				

What is an alcohol-related death?

<http://www.vs.gov.bc.ca/stats/annual/2007/pdf/glossary.pdf>

WHO: International Classification of Diseases System

<http://www.who.int/classifications/icd/en/>

Chronic Diseases—Incidence, Prevalence and Cost

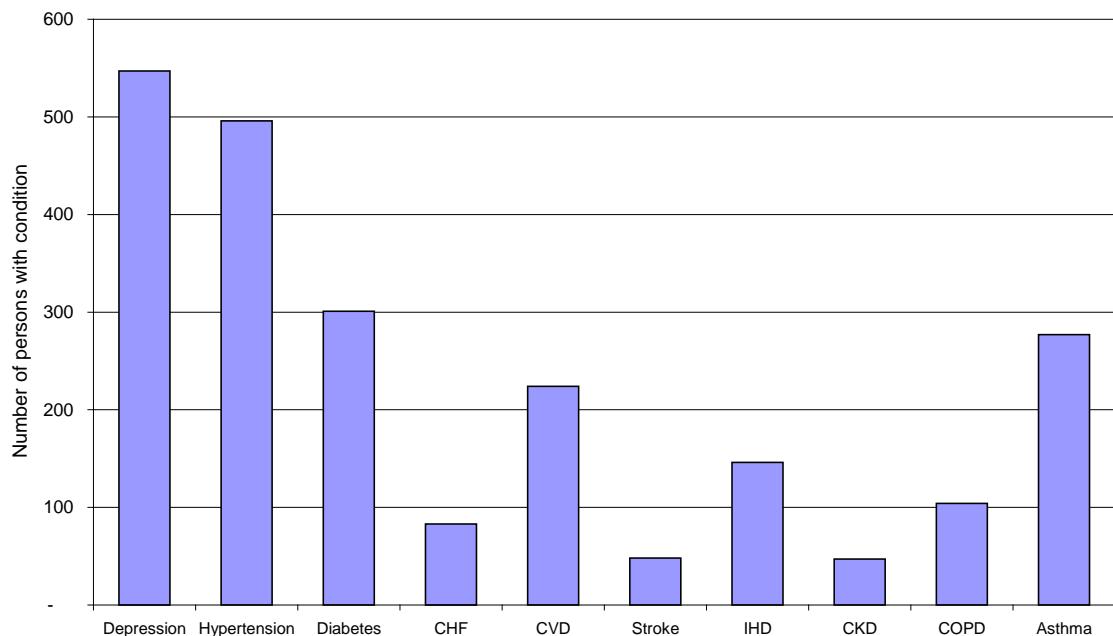
The evidence shows that at least 50 % of cancers and most chronic conditions are preventable. A handful of behaviors and risk factors related to smoking, diet, physical-inactivity, body weight, high risk sexual behavior and drug use, sun exposure and sex (gender), greatly influence the chances of developing chronic conditions and cancers.

Addressing these risk factors can prevent or delay these illnesses.^{163, 164, 165, 166, 167, 168}

The evidence also shows we can better manage these and other conditions, and improve patient outcomes with integrated approaches.^{169, 170, 171, 172, 173, 174, 175}

How much chronic disease?

Prevalence (existing cases) of selected chronic conditions
Haida Gwaii, LHA 050: 2008-2009



Chronic Conditions 2008 – 2009 ¹⁷⁶	Existing cases	New cases / yr	Cost / patient / yr
Depression	547	43	\$2,203
Hypertension	496	54	\$3,050
Diabetes	301	29	\$3,930
Congestive Heart Failure (CHF)	83	12	\$5,363
Cardiovascular Disease (CVD)	224	24	\$4,191
Stroke	48	9	\$3,646
Ischemic Heart Disease (IHD)	146	18	\$3,710
Chronic Kidney Disease (CKD)	47	8	\$5,379
COPD	104	18	\$5,395
Asthma	277	23	\$1,254

Data is from numerous sources including hospitalizations, clinical encounters, MSP Fee-for-Service data, BC Pharmacare data and chronic disease registers maintained by the Health System Planning Division, BC Ministry of Health Services. Reference Project No. 2009_305PHC. February 2010.

Cancer—Incidence, Prevalence and Mortality, 2011

The evidence shows that at least 50 % of cancers and most chronic conditions are preventable. A handful of behaviors and risk factors related to smoking, diet, physical-inactivity, body weight, high risk sexual behavior and drug use, sun exposure and sex (gender), greatly influence the chances of developing chronic conditions and cancers.

Addressing these risk factors can prevent or delay these illnesses.^{177, 178, 179, 180, 181, 182}

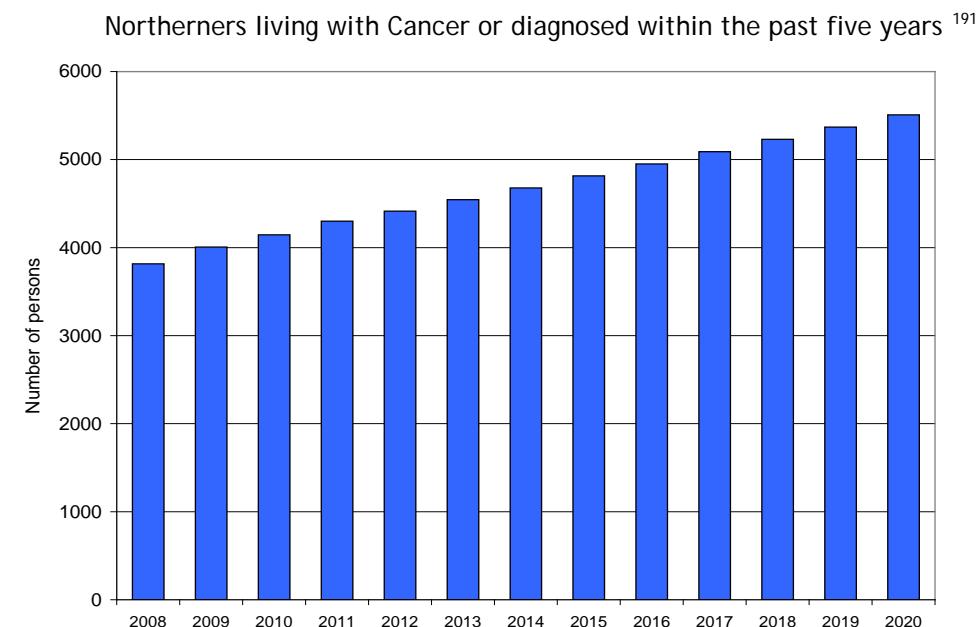
The evidence also shows we can better manage these and other conditions, and improve patient outcomes with integrated approaches.^{183, 184, 185, 186, 187, 188, 189}

Cancer expected in the Haida Gwaii LHA: 2011 - 2020

During 2011, we expect to see 23 new cases in Haida-Gwaii residents. This number will climb to 32 cases per year by 2020. Statistically, we anticipate that 11 Haida-Gwaii residents will die from cancer during 2011. This will climb to 18 deaths by 2020.¹⁹⁰

Cancer prevalence in Northern BC: 2011 - 2020

As our population grows older and as cancer detection and survival rates improve, we can expect that the number of northerners living with cancer will increase.



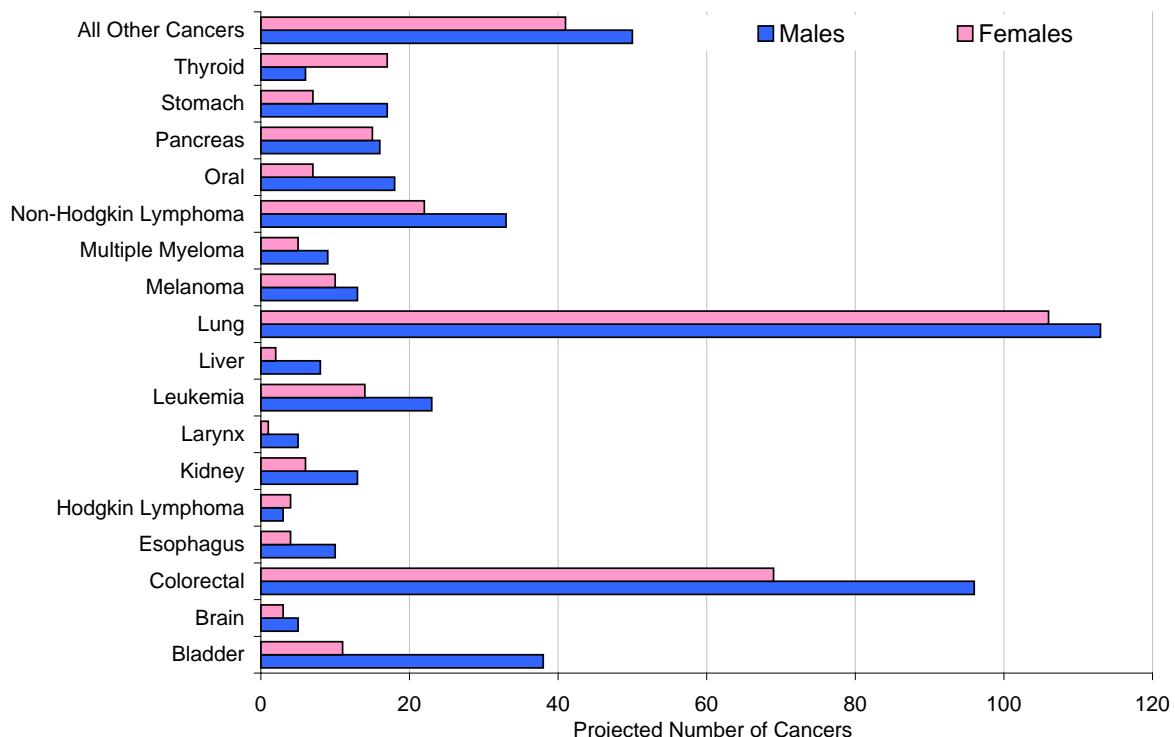
In 2011, nearly 4,300 northerners will be living with cancer or will have had a cancer diagnosis within the past five years. By 2020, this number will be 5,500 persons.¹⁹²

B.C. Cancer Agency Statistics and Reports: <http://www.bccancer.bc.ca>

Cancer—Estimated New Cases by Sex and Type in 2011

We know that lifestyle and behavioral factors greatly influence the risk for developing certain cancers. This is evident in the graph below. We also know that most cancers are more common in older people and, for cancers affecting men and women, the disease is usually more common among men.¹⁹³

Estimated New Cancer Diagnoses: Northern BC residents, 2011 ¹⁹⁴



To maintain the scale in the graph above we omitted a few cancers that were unique to either men or women. These cancers are summarized in the table below.

Estimated New Cancer Diagnoses: Northern BC 2011 ¹⁹⁵			
Cancer Type	Males	Females	Total
Body of uterus	0	27	27
Breast	0	166	166
Cervix	0	9	9
Prostate	204	0	204
Testis	7	0	7
Estimated Total	211	202	413

Source: BC Cancer Agency: Regional Cancer Statistics 2007. <http://www.bccancer.bc.ca>

Promoting Health and
Providing Exceptional Health
Services to Northerners



Planting the Seeds of Health in Northern British Columbia

Since 2001, HEAL has been working with communities as they plant the seeds of health in Northern British Columbia.

The HEAL vision is to support grassroots community based groups who have a dream to make changes in the North that will help to improve the health of Northerners.¹⁹⁶



The IMAGINE Community Seed Grants program is a great example of this support. Several separate initiatives were brought together under the unified umbrella of the IMAGINE Community Seed Grants Program resulting in greatly increased interest and uptake by communities. The seed grants for 2009/10 included:

- Healthy Eating/Active Living: \$20,000 to support projects such as community gardens, teaching kitchens, and healthy eating and physical fitness programs.
- HEAL for Your Heart: \$40,000 for projects aimed at preventing cardiac & vascular disease risk by combining education with lifestyle change activities.
- Injury Prevention grants: \$10,000 to support community projects aimed at reducing head and spinal cord injuries among children and youth, and seniors' falls, with the stress on evidence-based tools and approaches.
- Road health grants: \$30,000 went to support community-based projects that were aimed at reducing injury and death due to motor vehicle crashes.¹⁹⁷

During this past year HEAL partnered with Northern Health Aboriginal Health and the office for Healthy Community Development to support community gardens in rural First Nations communities. Through the *Provincial Access to Produce Initiative*, nine community gardens were supported in BC. One-third of these funded initiatives were located in northern BC and included: Haida Gwaii, Dease Lake and Telegraph Creek.¹⁹⁸

A close friend of HEAL, the Office for Healthy Community Development has produced a number of resources, including an IMAGINE Population Health Primer and a "Northern Health to Go" resource kit intended to help Northern Health respond more readily to invitations to participate in community health fairs.¹⁹⁹

Additional Resources

Healthy Eating Active Living in Northern BC: <http://www.healbc.ca/>

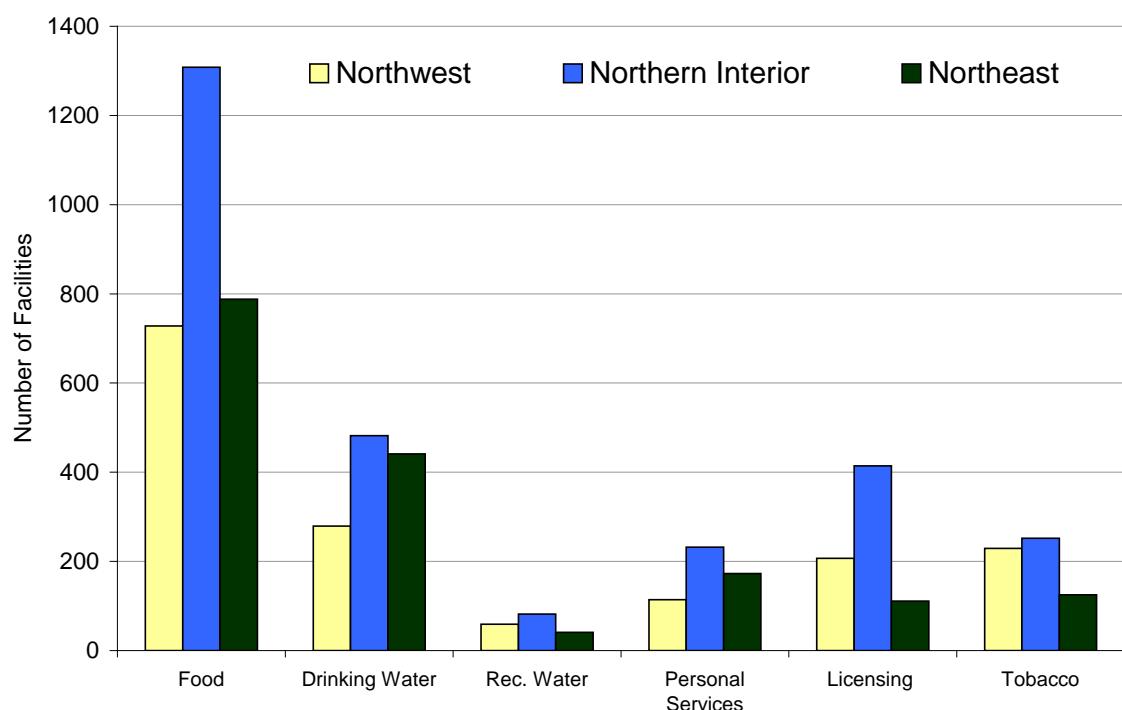
IMAGINE Population Health, available at Healthy Living and Communities website
<http://www.northernhealth.ca/YourHealth/HealthyLivingCommunities.aspx>

Monitoring of Facilities Overview

The business area that we regard as Public Health Protection has an enormous task: to support northerners to live well and be free from diseases and illness by monitoring over 6,000 separate facilities.

Routine facility monitoring provides quality assurance for northerners. It also provides opportunities to engage with operators to ensure that they have the knowledge and competency to operate the facilities and meet expected standards.

Summary of Inspected Facilities in Northern BC: June 2010 ²⁰⁰



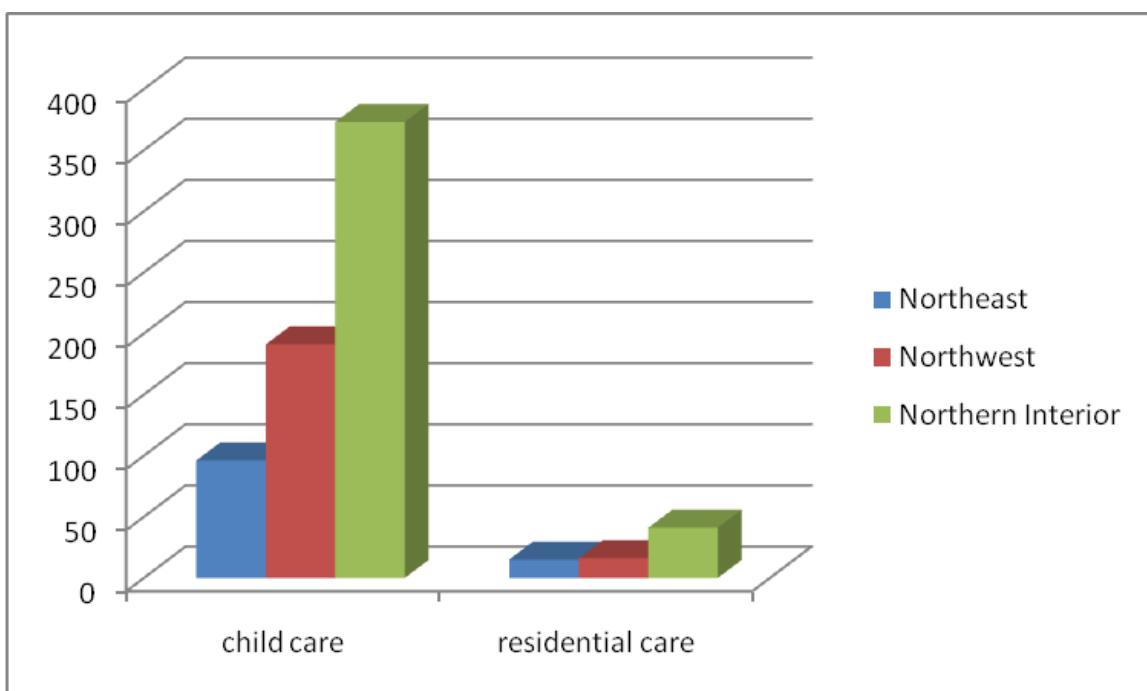
Facility Type	Northwest HSDA	Northern Interior	Northeast HSDA	NHA Total
Food	728	1308	788	2824
Drinking water	279	482	441	1202
Recreational water	59	82	41	182
Personal services	114	232	173	519
Licensing	207	414	111	732
Tobacco	229	252	125	606
Total	1616	2770	1679	6065

Monitoring of Licensed Care Facilities

The *Community Care and Assisted Living Act* and *Child Care Licensing Regulation* set forth minimum standards that all licensed residential and child care facilities are required to meet. These standards ensure a base level of protection and ensure that the individual rights and dignity of all persons in licensed facilities are preserved.

Routine monitoring by NH licensing officers provides quality assurance for northerners and opportunities to engage with operators to ensure they have the knowledge and competency to operate the facilities and meet the expected standards.

Licensed care facilities by HSDA, June 2010 ²⁰¹



Health Service Delivery Area	Child care	Residential
Northwest	193 facilities	15 Facilities
Northern Interior	375 Facilities	41 Facilities
Northeast	96 Facilities	15 facilities

Source: Northern Health Public Health Protection; Health-Space Information System. July 2010

Monitoring Community Water Systems

Northern Health environmental health officers (EHOs) routinely inspect, sample and assess community water systems. These systems are summarized in the table below.

Routine monitoring provides quality assurance for northerners and also provides opportunities to engage with operators, to ensure they have the knowledge and competency to operate the water systems correctly and meet expected standards.

Water Systems by type and location as of June 2010 ²⁰²

Water Source	Northwest	Northern Interior	Northeast
Deep well	202	337	108
Flowing	25	40	7
Infiltration gallery	4	11	2
Surface water	37	58	8
Shallow well	53	67	47
Spring	6	15	5
Other hauled water, cisterns, etc	99	109	250

Water systems with high hazard ratings are generally put on a water quality advisory or a boil water notice until the source of contamination is found, or adequate treatment facilities are installed. Most high hazard ratings are attributed to untreated surface water sources. Water systems can also have a high hazard rating due to chemical concentrations in the water, such as elevated arsenic levels.

Did you know. . .

4 Water Quality Advisories and 81 Boil Water Notices were issued in northern British Columbia during 2009.

Reasons to issue an advisory or notice on a water system include:

- High turbidity;*
- Inadequate disinfection;*
- Microbiological contamination; and*
- Chemical contamination.*

Community recreational waters such as pools, hot tubs, therapeutic tubs and beaches are also monitored and inspected by Northern Health. Samples are regularly assessed for the presence of microbial contaminations, such as E. coli, that might cause illness.

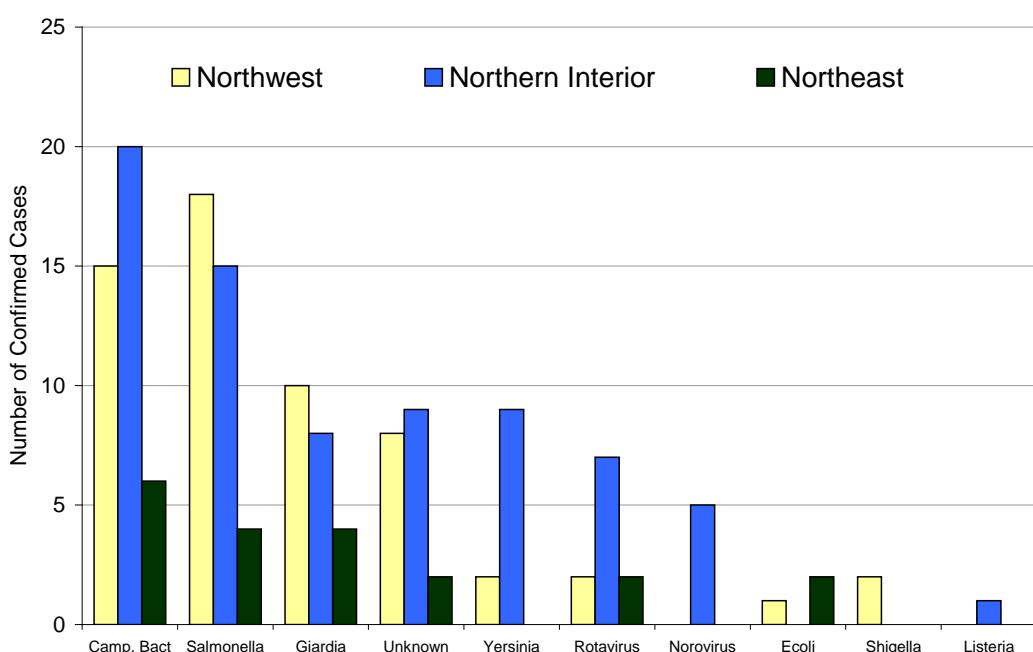
Limiting the Spread of Enteric Diseases

Northern Health environmental health officers (EHOs) are tasked with responding to reports of enteric diseases (food-borne illnesses) so as to ensure that an appropriate response is initiated and the spread of the disease is limited. The officers also use epidemiological techniques to identify sources and linkages to other cases.

In 2009, Northern Health EHOs responded to 161 lab-confirmed enteric illness reports.

These cases are summarized below.

Enteric Follow-ups by HSDA 2009 ²⁰³



EHOs also respond to potential outbreaks in the community. They play an integral role on the community outbreak management team by:

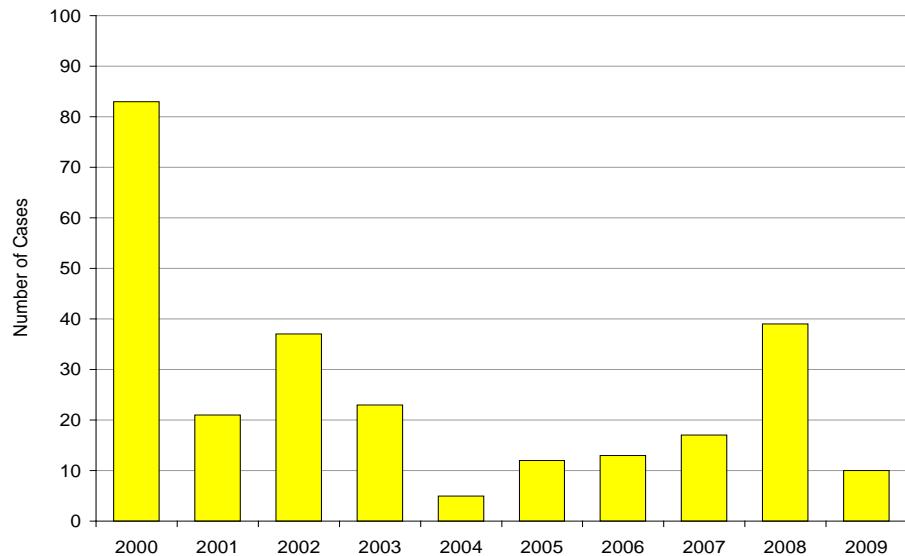
- Helping to identify a possible source of an outbreak;
- Identifying environmental controls;
- Giving instruction on sampling; and
- Conveying Medical Health Officer's recommendations and requirements.

Preventing Diseases through Immunization

Immunizations against polio, diphtheria, whooping cough, tetanus and measles can be highly effective and are some of the best health investments we can make. Along with the provision of clean drinking water and sanitation, immunizations are responsible for the huge increases we have seen in life expectancy around the world.^{204, 205}

Occasionally there is an outbreak of an illness that could have been prevented if the community was sufficiently immunized. Here is a selected summary.

Vaccine Preventable Diseases: Northwest 2000 – 2009²⁰⁶



Community ²⁰⁷	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Dease Lake	1	0	0	1	0	0	0	1	0	0	3
Hazelton	1	0	1	8	0	0	1	3	2	1	17
Houston	3	4	14	1	2	0	0	0	2	0	26
Kitimat	4	2	1	2	1	0	0	0	0	2	12
Masset	5	3	1	1	0	0	0	1	1	0	12
Prince Rupert	17	9	8	4	0	7	5	4	2	2	58
Q. C. City	12	1	0	0	1	0	0	2	2	0	18
Smithers	4	0	9	1	1	2	4	4	25	2	52
Stewart	17	0	0	0	0	0	0	0	1	0	18
Terrace	19	2	3	5	0	3	3	2	4	3	44
Total	83	21	37	23	5	12	13	17	39	10	260

Disease ²⁰⁸	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Hep B	23	8	15	7	1	7	12	7	3	5	88
IMD *	1	0	0	0	1	3	1	2	0	0	8
IPD *	0	0	0	1	2	1	0	7	11	3	25
HIB	1	0	0	0	0	0	0	0	1	0	2
Measles	0	0	0	0	0	0	0	0	0	0	0
Mumps	1	0	0	0	1	0	0	0	1	0	3
Pertussis	57	13	22	15	0	1	0	1	22	2	133
Rubella	0	0	0	0	0	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0	0	0	1	0	1
Total	83	21	37	23	5	12	13	17	39	10	260

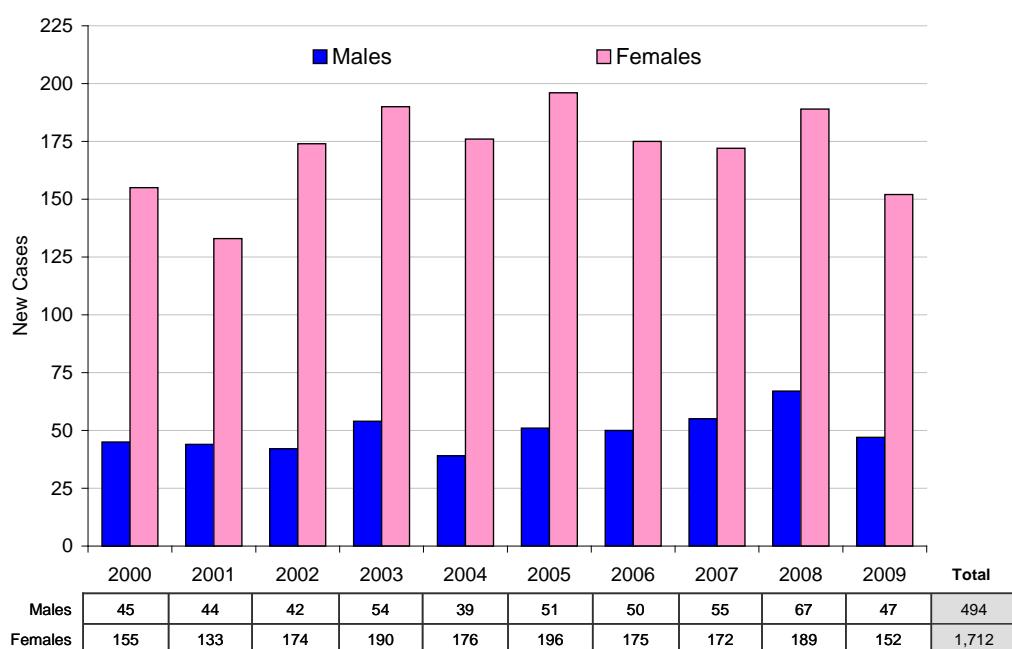
* IMD refers to Invasive Meningococcal Disease; IPD refers to Invasive Pneumo-coccal Disease. Also, Influenza is considered to be a vaccine-preventable disease but we have chosen to omit it from the above table. Pertussis = whooping cough

Promoting Sexual Health and Preventing Sexually Transmitted Infections

Chlamydia is one of the most common sexually transmitted infections (STI). This infection is caused by the bacterium *Chlamydia trachomatis*. It can be spread from one partner to another during vaginal, anal, or possibly oral sex and, if left untreated, can lead to complications that make it impossible for a woman to become pregnant.²⁰⁹

Certain activities increase your risk of being infected including: having unprotected sex, multiple sex partners, and a high-risk partner or partners; being sexually active before age 18; and having an impaired immune system.²¹⁰

New Chlamydia Notifications by sex: Northwest HSDA 2000 - 2009²¹¹



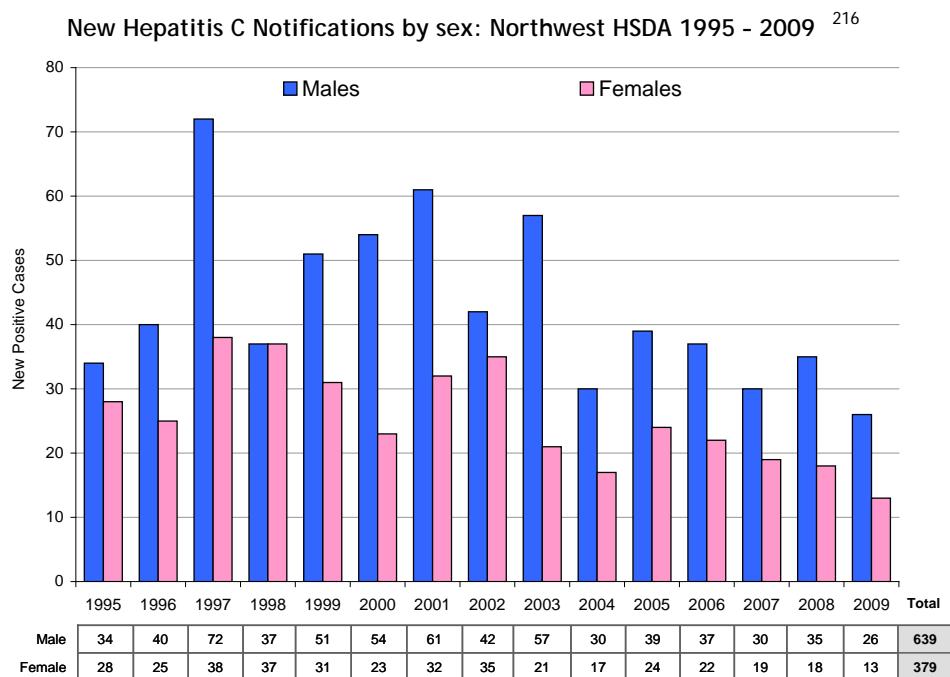
New Chlamydia Notifications by LHA: Northwest 2000 - 2009²¹²

LHA No.	Local Health Area Name	Male	Female	Total
050	Queen Charlotte	32	109	141
051	Snow Country	*	*	7
052	Prince Rupert	72	370	442
053	Upper Skeena	51	217	268
054	Smithers	93	255	348
080	Kitimat	31	129	160
087	Stikine	15	50	65
088	Terrace	154	459	613
092	Nisga'a	21	73	94
094	Telegraph Creek	24	44	68
Total	Northwest HSDA	494	1,712	2,206

Preventing Blood-Borne Infections

Hepatitis C is a preventable disease of the liver caused by the hepatitis C virus (HCV). HCV is estimated to affect 60,000 BC residents or 1.5% of the population. Prior to 1990, contaminated blood products accounted for 10-15% of new HCV infections. This route of infection has been virtually eliminated. Today the majority of new infections can be linked to injection drug use (IDU) and other high-risk behaviours.^{213,214}

Symptoms of HCV infection are commonly absent. This creates opportunities for others to be exposed. Some people, such as those affected by mental illness and addictions, can be hard to reach with prevention, harm reduction and treatment services.²¹⁵



New Hepatitis C Notifications by community: Northwest 1995 - 2009²¹⁷

LHA	LHA Name	Community	Male	Female	Total
050	Haida Gwaii	Masset	25	10	25
050	Haida Gwaii	Queen Charlotte	42	22	64
050	Haida Gwaii	Sandspit	*	*	*
051	Snow Country	Stewart	*	*	14
052	Prince Rupert	Prince Rupert	182	103	285
053	Upper Skeena	Hazelton	20	20	40
054	Smithers	Houston	22	12	34
054	Smithers	Smithers	68	36	104
080	Kitimat	Kitimat	54	42	96
087	Stikine	Dease Lake	*	*	10
088	Terrace	Terrace	206	127	333
Total	Northwest Health Service Delivery Area			639	379
* data suppressed to preserve confidentiality					

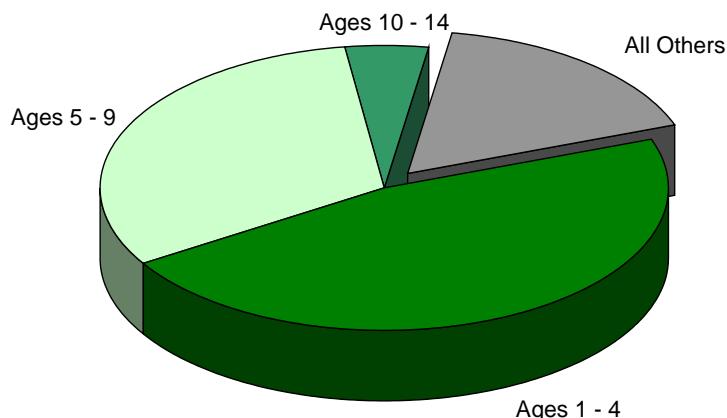
Encouraging Oral Health and Brighter Smiles

Northern Health dental personnel conduct regular oral health screenings of kindergarten children. They also apply fluoride varnish to protect infant's newly-erupted teeth and they engage in parental and community education. Poverty, diet, lack of parenting skills and an inability to access services can lead to poor oral health in children, to the extent that a dental restoration needs to be performed in hospital.

Not every dental procedure performed in our hospitals is due to poor oral health. However, since the majority of these hospital-based procedures are performed on children, we suspect that many could be avoided.

Dental Procedures in Hospital according to Age Group: 2004/05 - 2008/09

■ 1 - 4 □ 5 - 9 ■ 10 - 14 ■ All Others



Dental Interventions in Hospital: Northwest residents 2004/05 - 2008/09 ²¹⁸

Client's Place of Residence (Local Health Area)	Age Groups					
	1 - 4	5 - 9	10 - 14	1 - 14	15 +	Total
050 Haida Gwaii	66	51	6	123	16	139
051 Snow Country	*	*	*	*	*	6
052 Prince Rupert	201	119	27	347	132	479
053 Upper Skeena	157	81	9	247	13	260
054 Smithers	80	57	11	148	66	214
080 Kitimat	103	77	9	189	25	214
087 Stikine	11	14	*	28	*	33
088 Terrace	238	190	27	455	68	523
092 Nisga'a	73	35	*	111	15	126
094 Telegraph Creek	15	11	*	27	*	30
Total Northwest HSDA	945	638	96	1,679	345	2,024
Percent of Total	47	32	5	83	17	100

* data suppressed to preserve confidentiality

Introducing Some Common but Confusing Health Care Jargon...

Case Mix Groups

Broadly speaking, this is a way of grouping health concerns or cases so that resources, treatment processes and outcomes can be evaluated. In a nutshell, health concerns or cases with a similar anticipated clinical course and similar resource requirements are grouped together into a Case Mix Group.

Preventable Admissions

These are conditions where hospital admission is usually not needed if patients have timely access to appropriate services and are well managed in the community. Not all admissions for these conditions are preventable. These are also known as Admissions for Ambulatory Care Sensitive Conditions (ACSC).

Referred Out Services/Referrals

We use this term to describe the services that are not provided locally to the population or client group. In other words, people are referred elsewhere for service. For difficult and complex cases requiring a high degree of specialized knowledge, equipment and coordination, it is often not possible to provide the needed quality of care locally. In these instances, the services are referred out.

Self-Sufficiency

We use the term, self-sufficiency, when we are considering how much of the services used by a population were provided locally. We generally define a service as local if it is provided within the local health area where the client normally resides.

Utilization

We use this term when we are discussing a population and how it might be using certain services. In a conversation about utilization, you may hear phrases such as "*the 65+ age group uses (fill in the blank) services at a rate of XX per 1,000.*"

Weighted Cases/Resource Intensity Weights (RIW)

Weighted Cases and Resource Intensity Weights (RIW) are not the same thing. However, they both indicate to us the relative intensity of the services and resources required to address a health issue. RIW are used to standardize the expression of hospital case resource consumption and it recognizes that not all patients require the same health care resources. At the end of the day, overall resource consumption is usually expressed as weighted cases.

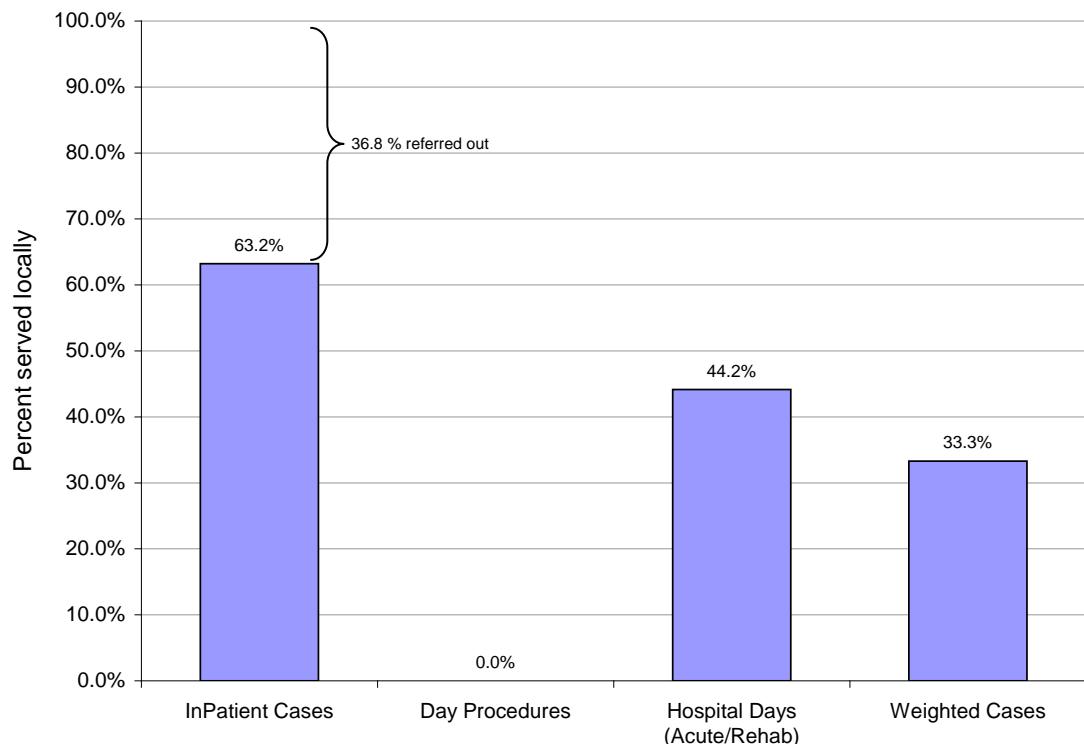
For more definitions: Canadian Institute for Health Information <http://secure.cihi.ca>

Acute Care Services Self-Sufficiency²¹⁹

We use the term self-sufficiency when we are considering how much of the services used by a population were provided locally. We generally define a service as local if it is provided within the local health area (LHA) where the client normally resides.

Services not provided locally, but elsewhere, are considered referred out services.

Haida Gwaii (LHA 050) residents self sufficiency: 2008 - 09



Residents from: Haida Gwaii LHA	Acute Care Service Location: 2008-09			
LHA No. 050	* Locally	Elsewhere	Total	% Locally
Inpatient cases	497	289	786	63.2%
Day procedure cases	0	441	441	0.0%
Acute rehab days	2083	2635	4718	44.2%
Total weighted cases	443	887	1330	33.3%

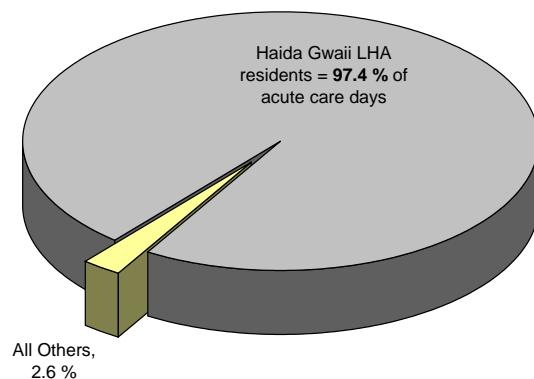
* Note: Persons cared for locally means that clients received care within their own Local Health Area (LHA). The percentage of persons receiving care locally is also known as local area self-sufficiency. Data does not include newborns.

Facility Profile: Northern Haida Gwaii Health Centre—Workloads ²²⁰

The Northern Haida Gwaii Health Centre is located within the Haida Gwaii LHA in the community of Masset. Most of the workload at this facility (97.4 % of days) can be attributable to residents of the Haida Gwaii LHA. Others contribute to the workload at Masset Hospital as shown in the pie chart and in sections B and C of the table below.

Section D in the table shows that Masset Hospital absorbed about 19.6 % of the workload (days) that is generated by residents of the Haida Gwaii LHA. Although not shown in the table below, we know that another 29.2 % of Haida Gwaii workload (days) was absorbed by Queen Charlotte Hospital. The remaining workload (51.2 % of days) generated by Haida-Gwaii residents, was absorbed elsewhere.

Masset Hospital Haida Gwaii , Workload (days): 2008 - 09



A	Facility No: 918 Masset Hospital Local Health Area: 050	Cases: 248 Inpatient +Day Surg.	Days: 949 Acute + Rehab	RIW: 194.2
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B	Client's usual residence	C % of this Hospital's Volume			D % of Client's LHA Volume		
		Cases	Days	RIW	Cases	Days	RIW
	LHA 050 Haida Gwaii	95.6	97.4	96.4	19.3	19.6	14.1
	All Others	4.4	2.6	3.6	n/a	n/a	n/a

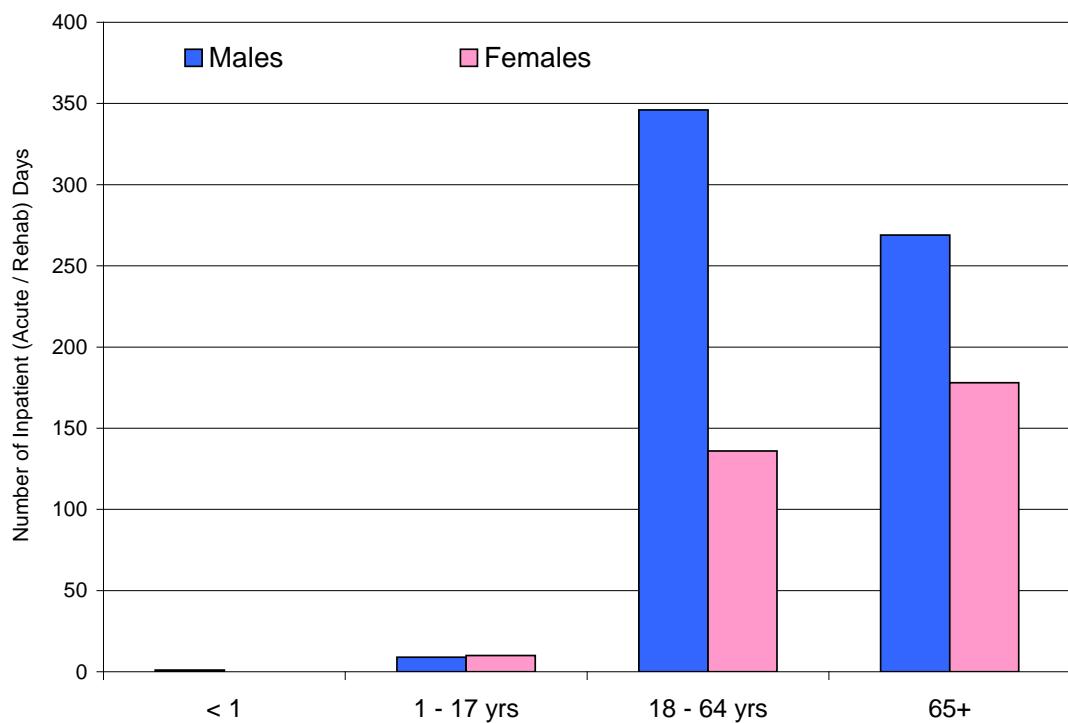
Notes: Data is for 2008 – 09, and includes acute, rehab, day-surgery and newborns; excludes ALC. Client locations (usual residences) that individually contribute to less than 1% of the total case volume for this facility are aggregated into the “All Others” category in column B.

- A Uniquely identifies this facility and provides a summary of workload.
- B Shows where the workload for this facility originated based on client's residence.
- C Shows how much of the facility's total workload was attributable to each client location
- D Shows how much of the workload from the client's home LHA was absorbed by this facility

Facility Profile: Northern Haida Gwaii Health Centre—Patients²²¹

Different ages and sexes have different requirements for health care services. Below is an age and sex summary of the patient workload at Masset Hospital.

Masset Hospital Workload (Days): 2008 - 09



A	Facility No: 918	Cases: 248 Inpatient + Day Surg.	Days: 949 Acute + Rehab	RIW: 194
	Masset Hospital			
	Local Health Area: 050			

B	Cases and Days	Patient counts by age group and sex ²²²								Total	
		< 1 yr		1 - 17 yrs		18 - 64 yrs		65 +			
		M	F	M	F	M	F	M	F		
In-patient cases		1	0	5	3	101	55	51	32	248	
In-patient days		1	0	9	10	346	136	269	178	949	
ALC cases		0	0	0	0	0	0	6	1	7	
ALC days		0	0	0	0	0	0	47	7	54	
Day surg. cases		0	0	0	0	0	0	0	0	0	
RIW		1	0	3	1	72	28	53	36	194	

A Uniquely identifies this facility and provides a summary of workloads.

B A summary of patient workloads at this facility based on the age and sex of clients.

Facility Profile: Northern Haida Gwaii—Top 15 Cases and Days

Top 15 Inpatient Cases: 2008 – 2009 ²²³ (Case Mix Group)	Cases	Days	ALOS
Symptom/sign of digestive system (257)	23	73	3.2
Chronic obstructive pulmonary disease (139)	15	52	3.5
Psychoactive substance use, withdrawal state (701)	14	34	2.4
Esophagitis /gastritis/miscellaneous digestive disease (256)	10	16	1.6
Viral/unspecified pneumonia (138)	9	25	2.8
Non-severe enteritis (249)	9	13	1.4
Miscellaneous mental disorder (672)	8	26	3.2
Gastrointestinal hemorrhage (254)	8	12	1.5
Gastrointestinal obstruction (255)	6	27	4.5
Antepartum disorder treated medically (557)	6	15	2.5
Seizure disorder, except status epilepticus (40)	6	8	1.3
Awaiting placement (809)	6	3	0.5
Myocardial infarction/shock/arrest without cardiac catheter (194)	5	37	7.4
Cirrhosis/alcoholic hepatitis (285)	5	24	4.8
Psychoactive substance use, acute intoxication (698)	5	7	1.4
Subtotal: Top15 cases account for 135 / 248 or 54% of cases	135	372	n/a
Total: Number of Cases and Days for Masset Hospital (Haida Gwaii)	248	949	n/a

Top 15 Inpatient Days: 2008 – 2009 ²²⁴ (Case Mix Group)	Days	Cases	ALOS
Symptom/sign of digestive system (257)	73	23	3.2
Osteomyelitis/septic arthritis (359)	68	3	22.7
Open wound/other/unspecified minor injury (776)	63	4	15.8
Chronic obstructive pulmonary disease (139)	52	15	3.5
Palliative care (810)	52	3	17.3
Myocardial infarction/shock/arrest without cardiac catheter (194)	37	5	7.4
Psychoactive substance use, withdrawal state (701)	34	14	2.4
Other dysfunction of central nervous system (37)	32	3	10.7
Gastrointestinal obstruction (255)	27	6	4.5
Miscellaneous mental disorder (672)	26	8	3.2
Viral/unspecified pneumonia (138)	25	9	2.8
Psychoactive substance use, dependence syndrome (700)	25	4	6.2
Cirrhosis/alcoholic hepatitis (285)	24	5	4.8
Other factor causing hospitalization (812)	21	4	5.2
Miscellaneous ear/nose/throat disorder (105)	20	2	10.0
Subtotal: Top15 days account for 579 / 949 or 61% of days	579	108	n/a
Total: Number of Days and Cases for Masset Hospital (Haida Gwaii)	949	248	n/a
Notes: The conditions shown above include Alternate Level of Care (ALC). Activity for newborns is excluded.			ALOS = Average Length of Stay.

What is a Case Mix Group?

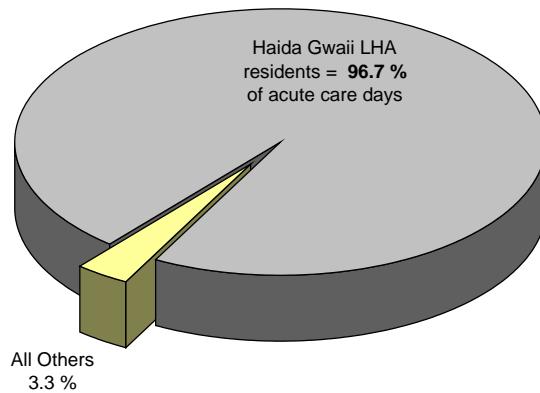
This is a way of grouping health concerns so that resources, processes and outcomes can be evaluated. In a nutshell, health concerns with a similar anticipated clinical course and similar resource requirements are grouped together into a Case Mix Group.

Facility Profile: Queen Charlotte Hospital—Workloads ²²⁵

Queen Charlotte Hospital is located within the Haida Gwaii LHA. Most of the workload at this facility (96.7 % of days) can be attributable to residents of the Haida Gwaii LHA. Others also contribute to the total workload at Queen Charlotte Hospital. This is shown in the pie chart and in sections B and C of the table below.

Section D in the table shows that Queen Charlotte Hospital absorbed about 29.2 % of the workload (days) that is generated by residents of Haida Gwaii LHA. Although not shown in the table below, we know that another 19.6 % of Haida Gwaii workload (days) was absorbed by Masset Hospital. The remaining workload (51.2 % of days) generated by Haida-Gwaii residents, was absorbed elsewhere.

Queen Charlotte Hospital Haida Gwaii, Workload (days): 2008 - 09



A	Facility No: 907 QCI General Hospital Local Health Area: 050	Cases: 282 Inpatient +Day Surg.	Days: 1,227 Acute + Rehab	RIW: 266.1
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B	Client's usual residence	C % of this Hospital's Volume			D % of Client's LHA Volume		
		Cases	Days	RIW	Cases	Days	RIW
	LHA 050 Haida Gwaii	96.1	96.7	96.8	32.4	29.2	19.1
	All Others	3.9	3.3	3.2	n/a	n/a	n/a

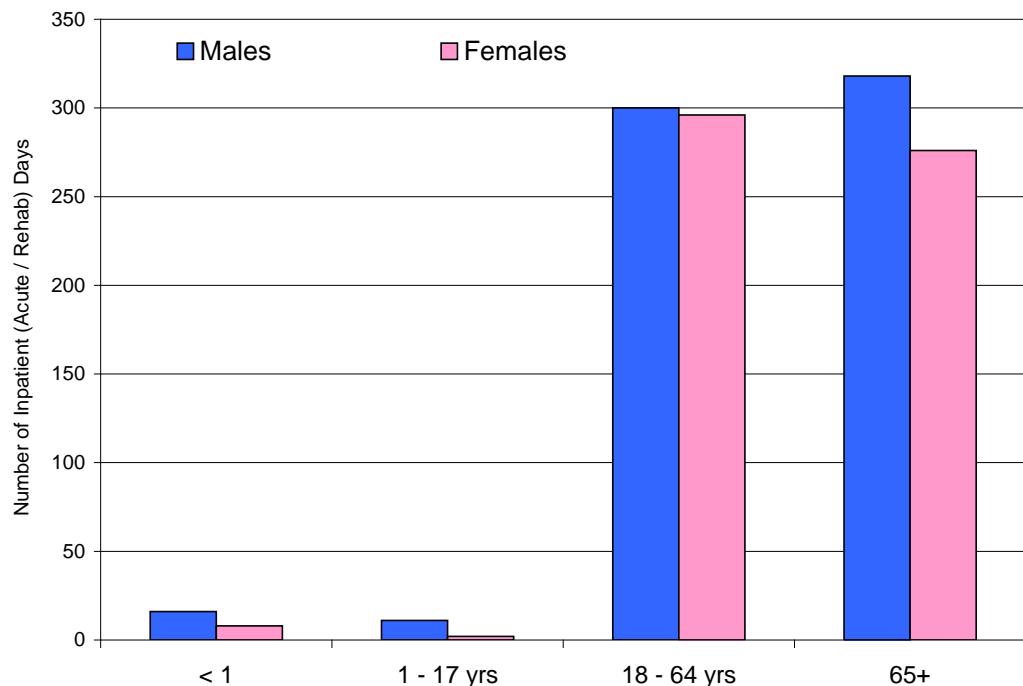
Notes: Data is for 2008 – 09, and includes acute, rehab, day-surgery and newborns; excludes ALC. Client locations (usual residences) that individually contribute to less than 1% of the total case volume for this facility are aggregated into the “All Others” category in column B.

- A Uniquely identifies this facility and provides a summary of workload.
- B Shows where the workload for this facility originated based on client's residence.
- C Shows how much of the facility's total workload was attributable to each client location.
- D Shows how much of the workload from the client's home LHA was absorbed by this facility.

Facility Profile: Queen Charlotte Hospital—Patients²²⁶

Different ages and sexes have different requirements for health care services.
 Below is an age and sex summary of the patient workload at Queen Charlotte Hospital

Queen Charlotte Hospital Workload (Days): 2008 - 09



A	Facility No: 907	Cases: 282 Inpatient + Day Surg.	Days: 1,227 Acute + Rehab		RIW: 266	
	Queen Charlotte					
	Local Health Area: 050					

B	Cases and Days	Patient counts by age group and sex								Total	
		< 1 yr		1 - 17 yrs		18 - 64 yrs		65 +			
		M	F	M	F	M	F	M	F		
	In-patient cases	10	6	7	2	82	77	57	41	282	
	In-patient days	16	8	11	2	300	296	318	276	1,227	
	ALC cases	0	0	0	0	0	2	5	2	9	
	ALC days	0	0	0	0	0	3	302	65	370	
	Day surg. cases	0	0	0	0	0	0	0	0	0	
	RIW	3	2	3	1	57	53	92	55	266	

A Uniquely identifies this facility and provides a summary of workloads.

B A summary of patient workloads at this facility based on the age and sex of clients.

Facility Profile: Queen Charlotte Hospital—Top 15 Cases & Days ²²⁷

Top 15 Inpatient Cases: 2008 – 2009 (Case Mix Group)	Cases	Days	ALOS
Chronic obstructive pulmonary disease (139)	17	148	8.7
Psychoactive substance use, withdrawal state (701)	15	40	2.7
Miscellaneous mental disorder (672)	13	66	5.1
Symptom/sign of digestive system (257)	12	28	2.3
Vaginal delivery, no other intervention (545)	10	17	1.7
Angina (except unstable)/chest pain without cardiac catheter (208)	9	26	2.9
Depressive episode without ECT (693)	8	39	4.9
Viral/unspecified pneumonia (138)	8	31	3.9
Arrhythmia without cardiac catheter (202)	8	23	2.9
Antepartum disorder treated medically (557)	8	9	1.1
Other anemia (635)	7	11	1.6
Diabetes (437)	6	56	9.3
Psychoactive substance use, acute Intoxication (698)	6	9	1.5
Palliative care (810)	5	114	22.8
Convalescence (806)	5	22	4.4
Subtotal: Top15 cases account for 137 / 271 or 51% of cases	137	639	n/a
Total: Number of Cases and Days for Queen Charlotte Islands General	271	1,211	n/a

Top 15 Inpatient Days: 2008 – 2009 (Case Mix Group)	Days	Cases	ALOS
Chronic obstructive pulmonary disease (139)	148	17	8.7
Palliative care (810)	114	5	22.8
Disorder related to nutrition (433)	84	2	42.0
Miscellaneous mental disorder (672)	66	13	5.1
Diabetes (437)	56	6	9.3
Schizotypal /delusional disorder (678)	47	4	11.8
Psychoactive substance use, withdrawal state (701)	40	15	2.7
Rehabilitation (805)	40	2	20.0
Depressive episode without ECT (693)	39	8	4.9
Heart failure without cardiac catheter (196)	38	4	9.5
Viral/unspecified pneumonia (138)	31	8	3.9
Symptom/sign of digestive system (257)	28	12	2.3
Other factor causing hospitalization (812)	26	4	6.5
Angina (except unstable)/chest pain without cardiac catheter (208)	26	9	2.9
Organic mental disorder (671)	24	2	12.0
Subtotal: Top15 days account for 807 / 1,211 or 67% of days	807	111	n/a
Total: Number of Days and Cases for Queen Charlotte Islands General	1,211	271	n/a

Notes: The conditions shown above include Alternate Level of Care (ALC). Activity for newborns is excluded.

ALOS = Average Length of Stay.

What is a Case Mix Group?

This is a way of grouping health concerns so that resources, processes and outcomes can be evaluated. In a nutshell, health concerns with a similar anticipated clinical course and similar resource requirements are grouped together into a Case Mix Group.

Preventable Admissions

Northwest HSDA: Facility Workload Summary 2008 - 09

Location	Acute Days ²²⁸ (includes ALC)	E / R ²²⁹ Visits	Ambulatory Visits ²³⁰	Preventable ²³¹ Admissions	
				Cases	Days
Terrace	16,338	23,613	8,451	89	380
Smithers	5,792	13,701	4,548	68	205
Prince Rupert	9,873	24,662	10,956	70	198
Kitimat	6,536	10,752	4,645	62	274
Upper Skeena	3,388	8,266	294	37	126
Masset	1,003	2,366	930	24	73
QC Village	1,592	3,184	1,147	20	101
Stewart	0	808	0	0	0
Houston D & T	0	4,255	0	0	0
Stikine D & T	0	1,100	0	0	0
Atlin Outpost	0	2,814	0	0	0
Totals	44,522	95,521	30,971	370	1,357

Northwest HSDA: Preventable Admissions 2008 - 09 ²³²

Cases	Seizure	COPD	Asthma	CHF	HTN	Angina	Diabetes	Total
Terrace	12	12	14	10	0	17	24	89
Smithers	13	7	6	15	0	16	11	68
Prince Rupert	20	12	4	8	2	8	16	70
Kitimat	6	18	9	7	2	10	10	62
Upper Skeena	8	13	2	2	1	6	5	37
Masset	5	9	0	2	1	4	3	24
QC Village	0	12	0	2	0	4	2	20
Total Cases	64	83	35	46	6	65	71	370

Total Days	137	428	107	196	13	225	251	1,357
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What are Preventable Admissions?

These are conditions where hospital admission is usually not needed if patients have timely access to appropriate services and are well managed in the community. Not all admissions for these conditions are preventable.

These are also known as Admissions for Ambulatory Care Sensitive Conditions (ACSC).

Appendices And References



British Columbia Local Health Areas



July, 2008

* Note: The Nisga'a Health Council is an independent health authority

**Local Health Area 50
Queen Charlotte**



Skeena-Queen Charlotte Regional District

Legend

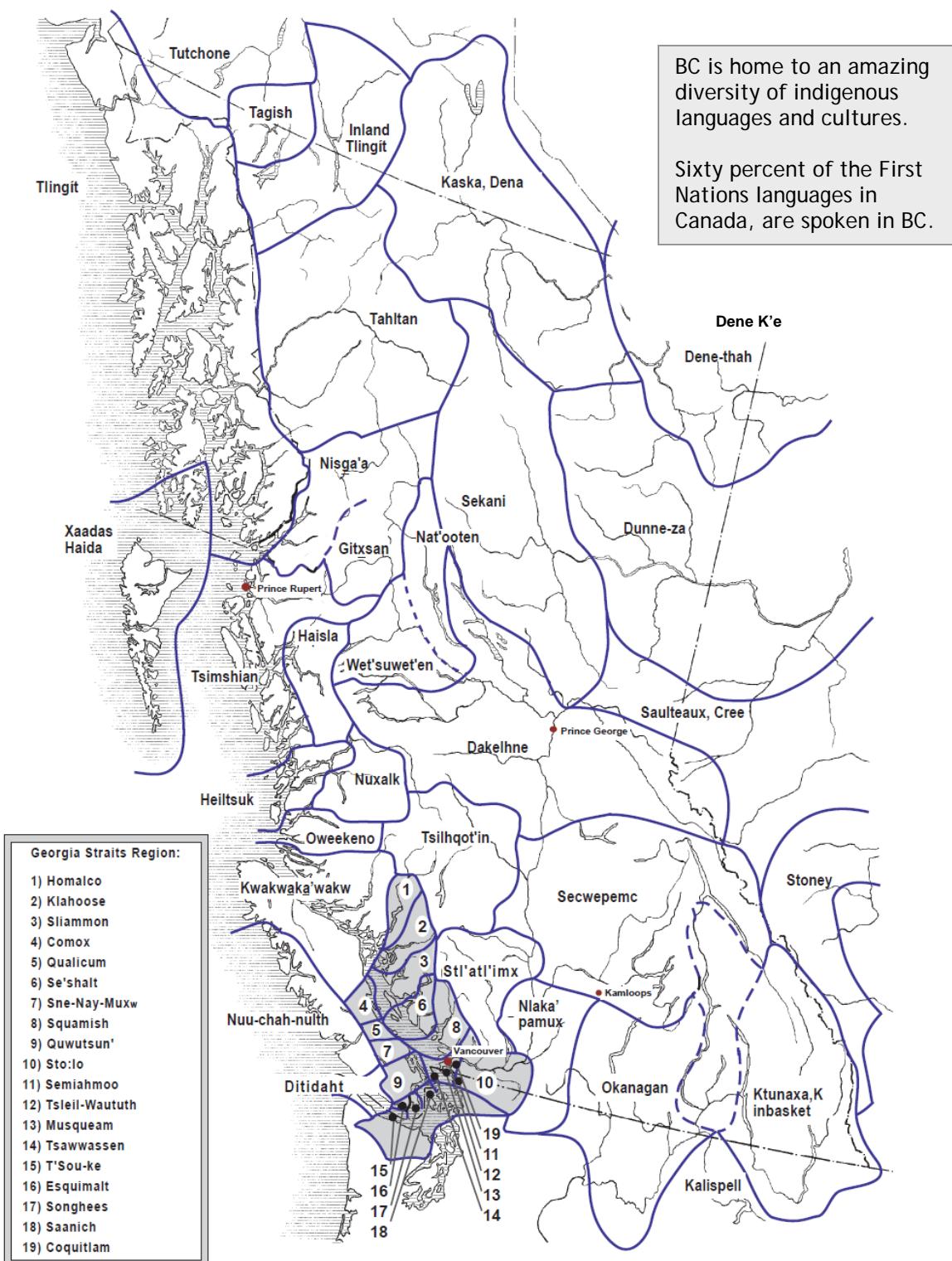
- Designated Placename
- Locality
- Highway
- Reserve
- Municipality
- Regional District Electoral Area



Prepared by BC Stats
Source: 2006 Census
Statistics Canada

0 5 10 20
Kilometers

First Nations Language Areas in British Columbia 233



Map Credit: This map was researched and produced by the UBC Museum of Anthropology, 1994.
<http://www.ainc-inac.gc.ca/ai/scr/bc/fnbc/mps/fnmp-eng.pdf>

First Nations Language Areas in Northern British Columbia ²³⁴

Region	Language	Other Names	Where the language may be spoken
Northwest	Danezage	Kaska	Most Danezāgé' speakers live in the Yukon communities of Ross River & Watson Lake. In BC communities of Liard First Nation (Lower Post /Daylu Dene), Dease River First Nation (Good Hope Lake) and Fireside
Northwest	Den k'e	Tagish	Den k'e is spoken in northwestern British Columbia / southern Yukon.
Northwest	Gitsanimx	Gitxsan	Spoken by the Gitxsan Nation whose territory is along the upper Skeena and Bulkley River.
		Gitksan	The communities of Kispiox, Glen Vowell, and Gitanmaax speak the same dialect and pronounce their language Gitsanimx.
Northwest	Gitsenimx	Gitxsan Gitksan	The communities of Gitsegukla, Gitwangak, and Gitanyow speak the same dialect and call their language Gitsenimx.
Northwest	Haida	Xaayda Kil	Historically, each village in Haida territory spoke their language a little differently. Xaaydaa Kil is the language in Skidegate. Xaad Kil is the language in Massett
Northwest	Haisla	enaksialak'ala a"islak'ala	Known as both enaksialak'ala and a"islak'ala and is spoken by the descendants of the Gitamaat and Kitlope bands in the Kitimat area of the north coast of British Columbia.
Northwest	Nisga'a	Nishga Nisk'a Niska	Nisga'a is spoken mostly in the Nass Valley by the Nisga'a people who have four main villages along the Nass River: Gingolx, Laxgalts'ap, Gitwinksihlkw and Gitlakdamix.

First Nations Language Areas in Northern British Columbia ²³⁵

Region	Language	Other Names	Where the language may be spoken
Northwest	Sm'algyax	Tsimshian	Sm'algyax is spoken on the north coast of BC in the Skeena River drainage. In communities: New Metlakatla (Alaska), Metlakatla (BC) Gitga'at Nation, Gitxaala Nation, Gitselasu (Kitselas), Kitsumkalum, and Lax Kw'alaams.
Northwest	Tahltan	Nahanni	Tāltān is spoken in northern British Columbia around Telegraph Creek, Dease Lake, and Iskut. Iskut First Nation and Tahltan Nation.
Northwest	Tlingit	Inland Tlingit	Tlingit is spoken in the far Northwest of British Columbia as well as the adjacent areas of the Yukon and Alaska.
North Interior	Dakelh	Carrier	Many different dialects of Dakelh are spoken throughout the central interior plateau communities including: Lheidli T'enneh, Lhooskuz Dene, Lhtako Dene, Nadleh Whuten, Nak'azdli, Nazko, Saik'uz, Stellat'en, Takla Lake, Tl'azten, Tsil Kaz Koh, Ulkatchot'en, Wet'suwet'en, Yekooche
North Interior	Nedut'en	Nat' ooot'en Babine	Nedut'en is spoken around Babine Lake, Trembleur Lake, and Takla Lake and in the communities of Lake Babine Nation, Takla and Cheslatta First Nation.
North Interior	Tse'khene	Sekani	Tse'khene (Sekani) is spoken in Northeast British Columbia starting a little bit north of Prince George, around Williston Lake and westward across the northern reaches of Takla Lake including: Kwadacha, Tsay Keh Dene and Mcleod Lake.
North Interior	Tsilhqot'in	Chilcotin Tzilkotin	Tsilhqot'in is spoken in the Central Interior of British Columbia, roughly speaking, in the area to the West of Williams Lake, along Highway 20. In communities of the Tl'esqox, Tsi Del Del, Ulkatchot'en, Xeni Gwet'in, Yunesit'in and Esdilagh peoples.

First Nations Language Areas in Northern British Columbia²³⁶

Region	Language	Other Names	Where the language may be spoken
North Interior	<u>Wetsuwet'en</u>	Babine Witsuwit'en	Witsuwit'en is spoken in the Bulkley Valley, around Broman Lake, and in the vicinity of Skins Lake, Hagwilget Village, Moricetown, Nee Tahi Buhn, Skin Tyee, Ts'il Kaz Koh, and Wet'suwet'en First Nation.
Northeast	<u>Anishnaubemowin</u>	Saulteau Ojibway	In the 1870s one band of Anishnaubemowin (Saulteau) migrated westward from Manitoba, They settled at Moberly Lake where the Nēhiyawēwin (Cree) and Dane-Zaa (Beaver) people were established.
Northeast	<u>Cree</u>	Nēhiyawēwin	(Nēhiyawēwin) is spoken by numerous First Nations on the Plains and extends from Alberta westward into a portion of the Northeastern BC and the Rocky Mountains.
Northeast	<u>Dane Zaa</u>	Beaver	Dane-zaa Záágé? is spoken at Doig River, Blueberry River, Halfway River, and Prophet River in BC, as well as Boyer River (Rocky Lane) and Child Lake (Eleske) in Alberta.
Northeast	<u>Danezage</u>	Kaska	Yukon: Ross River & Watson Lake. BC: Liard First Nation (Lower Post also known as Daylu Dene Council), Dease River First Nation (Good Hope Lake) and Fireside.
Northeast	<u>Dene K'e</u>	Dene Tha' Slave	Dene K'e is spoken in the far Northeast corner of British Columbia, the southeast corner of the Yukon, NWT and northern Alberta. Fort Nelson First Nation is the only Dene K'e speaking community in BC.
<p>This summary table was compiled from materials researched and published by the First People Language Map of British Columbia. http://maps.fphlcc.ca/about. The underlined text in the second column of the table is hyper-linked to the FPHLCC website and will take the reader to the summary page for each language, including the local contacts who were consulted.</p> <p>About the First Peoples' Language Map of British Columbia</p> <p>This project was initiated by First Peoples' Heritage, Language and Culture Council (FPHLCC) in 2005 with funding from the BC Ministry of Education. FPHLCC staff member and linguist, Sarah Kell, started the language map with boundaries provided by the Museum of Anthropology at the University of British Columbia. http://www.ainc-inac.gc.ca/ai/scr/bc/fnbc/mps/fnmp-eng.pdf</p>			

Northwest Health Service Delivery Area Facility Activity Summaries

Prepared August 2010

Northern Facility Activity Summaries - Northwest HSDA ²³⁷

Facility No. 918	Northern Haida Gwaii Hospital (Masset)			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Acute days stay (incl. ALC) total	810	1,144	1,001	1,025
Acute discharges/deaths total	196	201	248	201
Acute in-patient admissions total	194	202	250	198
Acute in-patient days (excl. ALC)	665	980	946	727
ALC days total	174	106	175	162
Ambulatory visits (excl. E/R).	517	716	930	1,128
Emergency visits (excl. Ambul)	2,158	2,224	2,366	2,410
In-patient surgical cases total	n/a	n/a	n/a	n/a
Surgical day care cases total	n/a	n/a	n/a	n/a
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	57,306	65,274	68,895	40,081
Laboratory - units total	146,337	128,571	172,350	165,127
Notes: Implementation of Health Link North Clinical Information System has greatly improved the accuracy of lab and diagnostic imaging information. The decrease in D.I. units for 2009-10 reflects this improved accuracy.				

Facility No. 907	Queen Charlotte Islands Hospital			
Activity Summary	2006/ 07	2007/ 08	2008/ 09	2009/ 10
Acute days stay (incl. ALC) total	2,784	1,592	1,597	1,793
Acute discharges/deaths total	230	283	282	249
Acute in-patient admissions total	228	281	286	249
Acute in-patient days (excl. ALC)	1,266	1,296	1,499	1,327
ALC days total	634	296	371	379
Ambulatory visits (excl. E/R).	240	420	1,147	1,257
Emergency visits (excl. Ambul)	2,383	2,650	3,184	3,039
In-patient surgical cases total	n/a	n/a	n/a	n/a
Surgical day care cases total	n/a	n/a	n/a	n/a
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	48,168	56,098	67,753	39,129
Laboratory - units total	172,647	136,642	134,267	148,015
Notes: Implementation of Health Link North Clinical Information System has greatly improved the accuracy of lab and diagnostic imaging information. The decrease in D.I. units for 2009-10 reflects this improved accuracy.				

Northern Facility Activity Summaries - Northwest HSDA

Facility No. 902	Prince Rupert Regional Hospital			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Acute days stay (incl. ALC) total	7,934	8,696	9,876	8,577
Acute discharges/deaths total	1,937	2,058	1,984	1,948
Acute in-patient admissions total	1,959	2,051	2,003	1,938
Acute in-patient days (excl ALC)	6,703	7,415	7,753	7,468
ALC days total	1,233	1,548	1,609	930
Ambulatory visits (excl. E/R)	8,481	10,088	11,780	8,041
Emergency visits (excl. Ambul)	19,150	22,702	24,905	27,492
In-patient surgical cases total	584	567	612	461
Surgical day care cases total	2,074	1,956	1,932	1,662
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	623,322	687,725	619,400	536,921
Laboratory - units total	1,017,314	1,137,763	1,133,748	1,042,632
Notes: Implementation of Health Link North Clinical Information System has greatly improved the accuracy of lab and diagnostic imaging information. The decrease in lab and D.I. units for 2009-10 reflects this improved accuracy. The drop in ambulatory care visits in 2009-10, reflects changes to the Cardiac Outreach Program.				

Facility No. 912	Mills Memorial Hospital (Terrace)			
Activity Summary	2006/ 07	2007/ 08	2008/ 09	2009/ 10
Acute days stay (incl. ALC) total	15,005	14,130	16,338	15,763
Acute discharges/deaths total	2,429	2,399	2,490	2,507
Acute in-patient admissions total	2,405	2,393	2,459	2,465
Acute in-patient days (excl. ALC)	13,859	12,756	13,413	13,239
ALC days total	1,198	2,111	2,455	2,016
Ambulatory visits (excl. E/R)	5,914	8,722	9,651	9,711
Emergency visits (excl. Ambul)	24,211	22,104	23,613	24,573
In-patient surgical cases total	456	510	498	507
Surgical day care cases total	2,936	3,060	3,002	2,894
Psychiatry/addiction admissions	146	179	160	133
Psychiatry/addiction I/P days	2,920	2,779	2,564	2,816
Diagnostic imaging units total	1,111,149	1,049,464	1,056,185	1,154,926
Laboratory - units total	960097	1,018,316	1,161,110	1,238,178

Northern Facility Activity Summaries - Northwest HSDA

Facility No. 917	Kitimat General Hospital & Health Centre			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Acute days stay (incl. ALC) total	5,144	5,840	6,536	6,548
Acute discharges/deaths tTotal	1,450	1,496	1,135	1,086
Acute in-patient admissions total	1,469	1,464	1,120	1,089
Acute in-patient days (excl. ALC)	6,006	5,969	5,520	5,331
ALC days total	513	546	1,273	1,527
Ambulatory visits (excl. E/R)	1,521	2,880	4,645	3,099
Emergency visits (excl. Ambul)	10,462	11,301	10,752	12,621
In-patient surgical cases total	511	489	382	356
Surgical day care cases total	1,185	1,421	1,361	1,366
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	468,181	432,936	385,034	291,691
Laboratory - units total	841,160	664,197	665,696	685,968
Notes: Implementation of Health Link North Clinical Information System has greatly improved the accuracy of lab and diagnostic imaging information. The decrease in D.I. units for 2009-10 reflects this improved accuracy.				

Facility No. 901	Wrinch Memorial Hospital (Hazelton)			
Activity Summary	2006/ 07	2007/ 08	2008/ 09	2009/ 10
Acute days stay (incl. ALC) total	4,242	6,552	3,388	3,351
Acute discharges/deaths total	1,113	1,523	768	746
Acute in-patient admissions total	1,100	1,513	764	729
Acute in-patient days (excl ALC)	3,175	3,804	2,825	2,256
ALC days total	1,675	1,539	532	783
Ambulatory visits (excl. E/R)	169	252	294	332
Emergency visits (excl. Ambul)	4,704	7,394	8,266	7,900
In-patient surgical cases total	47	37	22	32
Surgical day care cases total	316	332	285	339
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	155,530	182,080	179,056	166,524
Laboratory - units total	334,161	372,548	370,468	379,372

Northern Facility Activity Summaries - Northwest HSDA

Facility No. 903	Bulkley Valley District Hospital (Smithers)			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Acute days stay (incl. ALC) total	6,115	6,359	5,792	5,583
Acute discharges/deaths total	1,603	1,335	1,449	1,432
Acute in-patient admissions total	1,610	1,324	1,456	1,433
Acute in-patient days (excl. ALC)	5,370	5,099	5,117	5,313
ALC days total	870	1,332	634	547
Ambulatory visits (excl. E/R)	3,122	4,252	4,918	4,371
Emergency visits (excl. Ambul)	14,765	14,396	13,701	13,363
In-patient surgical cases total	202	169	185	155
Surgical day care cases total	1,296	1,188	1,385	1,134
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	633,364	649,042	635,292	431,316
Laboratory - units total	936,510	880,970	810,767	819,262
Notes: Implementation of Health Link North Clinical Information System has greatly improved the accuracy of lab and diagnostic imaging information. The decrease in D.I. units for 2009-10 reflects this improved accuracy.				

Facility No. 910	Stewart Health Centre			
Activity Summary	2006/ 07	2007/ 08	2008/ 09	2009/ 10
Acute days stay (incl. ALC) total	48	0	0	0
Acute discharges/deaths total	12	0	0	0
Acute in-patient admissions total	12	0	0	0
Acute in-patient days (excl. ALC)	48	0	0	0
ALC days total	n/a	n/a	n/a	n/a
Ambulatory visits (excl. E/R)	n/a	n/a	n/a	n/a
Emergency visits (excl. Ambul)	743	750	937	977
In-patient surgical cases total	n/a	n/a	n/a	n/a
Surgical day care cases total	n/a	n/a	n/a	n/a
Psychiatry/addiction admissions	n/a	n/a	n/a	n/a
Psychiatry/addiction I/P days	n/a	n/a	n/a	n/a
Diagnostic imaging units total	17,710	21,377	14,132	6,909
Laboratory - units total	90,482	73,961	59,626	42,113
Notes: Implementation of Health Link North Clinical Information System has greatly improved the accuracy of lab and diagnostic imaging information. Decrease in lab and D.I. units for 2009-10 reflects this improvement.				

Northern Facility Activity Summaries - Northwest HSDA

Facility No. 909	Houston Health Centre			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Ambulatory visits (excl. E/R)	n/a	n/a	n/a	n/a
Emergency visits (excl. Ambul)	4,815	4,630	4,255	4,238
Diagnostic imaging units total	51,859	58,683	63,049	58,373
Laboratory - units total	173,782	156,310	139,330	132,279

Facility No. 770	Stikine Health Centre			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Ambulatory visits (excl. E/R)	n/a	n/a	n/a	n/a
Emergency visits (excl. Ambul)	1,139	1,243	1,100	911
Diagnostic imaging units total	26,246	26,020	26,631	25,177
Laboratory - units total	59,417	59,759	55,833	60,115

Facility No. 914	Atlin Health Centre			
Activity Summary	2006/07	2007/08	2008/09	2009/10
Ambulatory visits (excl. E/R)	n/a	n/a	n/a	n/a
Emergency visits (excl. Ambul)	2,823	2,380	1,586	1,412
Diagnostic imaging units total	n/a	n/a	n/a	n/a
Laboratory - units total	n/a	n/a	n/a	n/a

References:

- 1 What Determines Health: Public Health Agency of Canada
<http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php>
- 2 Healthy and Productive Canada: A Determinants of Health Approach. The Standing Senate Committee on Social Affairs, Science and Technology Final Report of the Senate Subcommittee on Population Health.
<http://www.parl.gc.ca/40/2/parlbus/commbus/senate/Com-e/popu-e/rep-e/rephealthjun09-e.pdf>
- 3 Socio-economic Profiles by Local Health Area. BC Stats. http://www.bcstats.gov.bc.ca/data/sep/lha/lha_main.asp
- 4 Socio-economic Profiles by Local Health Area. BC Stats. http://www.bcstats.gov.bc.ca/data/sep/lha/lha_main.asp
- 5 BC Treaty Commission Statement of Intent Maps: GEO BC. <http://ilmbwww.gov.bc.ca/cis/initiatives/treaty/>
- 6 BC Ministry of Aboriginal Relations & Reconciliation: First Nations by Region.
<http://www.gov.bc.ca/arr/treaty/regional.html>
- 7 First Nations Profiles: Registered members on own reserve. INAC, 2009. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 8 BC Stats: Population Estimates and Projections for Local Health Areas: PEOPLE 35.
<http://www.bcstats.gov.bc.ca/data/pop/popstart.asp>
- 9 Translation of Place Names into Administrative Areas: BC Stats Updated February 2010.
http://www.bcstats.gov.bc.ca/data/pop/georef/place_names.xls
- 10 Atlin Community Profile, Northern Lights College: <http://www.nlc.bc.ca/campuses.atlin.profile.php>
- 11 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 12 Census 2006 Profiles: BC Stats http://www.bcstats.gov.bc.ca/data/cen06/profiles/detailed/ch_alpha.asp
- 13 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 14 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 15 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 16 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 17 Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>
- 18 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 19 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 20 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 21 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 22 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 23 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 24 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 25 Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>
- 26 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 27 Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>
- 28 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 29 Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>
- 30 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 31 Census 2006 Profiles: BC Stats http://www.bcstats.gov.bc.ca/data/cen06/profiles/detailed/ch_alpha.asp
- 32 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 33 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 34 BC Stats: Indian Reserves. <http://www.bcstats.gov.bc.ca/data/cen06/ir2006.asp>
- 35 Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>
- 36 First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>
- 37 Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

³⁸ Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

³⁹ First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>

⁴⁰ Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

⁴¹ First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>

⁴² Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

⁴³ Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

⁴⁴ Census 2006 Profiles: BC Stats http://www.bcstats.gov.bc.ca/data/cen06/profiles/detailed/ch_alpha.asp

⁴⁵ Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

⁴⁶ First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>

⁴⁷ BC Stats: Designated Places. <http://www.bcstats.gov.bc.ca/data/cen06/c2006pop.asp>

⁴⁸ First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>

⁴⁹ Regional, Municipal and Community Fact Sheets: <http://www.bcstats.gov.bc.ca/data/dd/facsheet/facsheet.asp>

⁵⁰ First Nations Profiles: Registered members on own reserve. INAC, 2010. <http://pse5-esd5.ainc-inac.gc.ca/fnp/>

⁵¹ Human Early Learning Partnership: the Early Development Index: a Population Health Perspective. <http://www.earlylearning.ubc.ca/research/initiatives/early-development-instrument/>

⁵² Early Childhood Health Interventions Could Save Billions in Health Costs Later in Life. John Hopkins Bloomberg, School of Public Health, Public Health News Centre May 15, 2009. http://www.jhsph.edu/publichealthnews/press_releases/2009/guyer_early_childhood.html

⁵³ Growing up in BC. Report of the BC Representative for Children and Youth. 2010. <http://www.rcybc.ca/Content/Publications/Reports.asp>

⁵⁴ BC Ministry of Education: Reporting on K - 12 by School District: <http://www.bced.gov.bc.ca/reporting/>

⁵⁵ Tobacco Sales to Minors: Tobacco Retailer Violation Report; April 1, 2008 - March 31, 2009. Prepared by Northern Health Public Health Protection; Report No: 0605. October 08, 2009.

⁵⁶ Pathways to Health and Healing: 2nd report on the Health and Wellbeing of Aboriginal People in BC BC Provincial Health Officer's Annual Report 2007. <http://www.hls.gov.bc.ca/pho/reports/>

⁵⁷ BC Stats: Socioeconomic Indices for Local Health Areas: Youth at Risk, Children at Risk and Education Concerns. http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁵⁸ Regional Socio-economic Profiles and Indices: 2010. Definitions and Sources: BC Stats March 2010. <http://www.bcstats.gov.bc.ca/data/sep/glossary.pdf>

⁵⁹ British Columbia Regional-District: Migration Components. BC Stats: released January 2010. <http://www.bcstats.gov.bc.ca/data/pop/mig/rdcomp.pdf>

⁶⁰ Persons aged 65+ and 75+ by Health Authority; 2010 - 2025. BC Stats: PEOPLE 35.

⁶¹ British Columbia Socio-economic Profiles and Indices: 2010: BC Stats. <http://www.bcstats.gov.bc.ca/data/sep/index.asp>

⁶² Geographic and Statistical Profile of Aboriginal Peoples 2006: BC Stats. http://www.bcstats.gov.bc.ca/data/cen01/abor/ha06_ab.asp

⁶³ British Columbia Socio-economic Profiles: 2010, BC Stats. <http://www.bcstats.gov.bc.ca/data/sep/choose.asp>

⁶⁴ Regional Population Projections: PEOPLE 34, Components of Population Growth. BC Stats: 2009. <http://www.bcstats.gov.bc.ca/>

⁶⁵ Technical Assumptions for Population Forecasting in BC: BC Stats, July 2009. <http://www.bcstats.gov.bc.ca/data/pop/pop/popproj.asp>

⁶⁶ Regional Population Projection Migration Assumptions: PEOPLE 34: BC Stats, July 2009. <http://www.bcstats.gov.bc.ca/data/pop/pop/popproj.asp>

⁶⁷ Regional Population Projections: PEOPLE 34, BC Stats: 2010 <http://www.bcstats.gov.bc.ca/data/pop/popstart.asp>

⁶⁸ British Columbia Regional-District: Migration Components. BC Stats: released January 2010. <http://www.bcstats.gov.bc.ca/data/pop/mig/rdcomp.pdf>

⁶⁹ British Columbia Regional District Migration Components. BC Stats, Ministry of Citizen Services, January 2010

<http://www.bcstats.gov.bc.ca/data/pop/mig/rdcomp.pdf>

⁷⁰ Age-specific and Total Fertility Rates by Local Health Area. 1987 – 2009: BC Stats: Updated January 2010.
http://www.bcstats.gov.bc.ca/data/pop/vital/lha_tfr.asp

⁷¹ BC Stats: Populations and demographics, Frequently Asked Question.
http://www.bcstats.gov.bc.ca/data/pop/faq_pop.asp#01

⁷² BC Stats: Population Estimates and Projections for Local Health Areas: PEOPLE 35.
<http://www.bcstats.gov.bc.ca/data/pop/popstart.asp>

⁷³ BC Stats: Population Estimates and Projections for Local Health Areas: PEOPLE 35.
<http://www.bcstats.gov.bc.ca/data/pop/popstart.asp>

⁷⁴ BC Stats: Population Estimates and Projections for Local Health Areas: PEOPLE 35.
<http://www.bcstats.gov.bc.ca/data/pop/popstart.asp>

⁷⁵ Human Early Learning Partnership; the Early Development Index: a Population Health Perspective.
<http://www.earlylearning.ubc.ca/research/initiatives/early-development-instrument/>

⁷⁶ British Columbia, Local Area Economic Dependencies: 2006. BC Stats, March 2009.
http://www.bcstats.gov.bc.ca/pubs/econ_dep.asp

⁷⁷ British Columbia, Local Area Economic Dependencies: 2006. BC Stats, March 2009.
http://www.bcstats.gov.bc.ca/pubs/econ_dep.asp

⁷⁸ Human Early Learning Partnership; the Early Development Index: a Population Health Perspective.
<http://www.earlylearning.ubc.ca/research/initiatives/early-development-instrument/>

⁷⁹ Human Early Learning Partnership; the Early Development Index: a Population Health Perspective.
<http://www.earlylearning.ubc.ca/research/initiatives/early-development-instrument/>

⁸⁰ What Determines Health: Public Health Agency of Canada
<http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php>

⁸¹ Healthy and Productive Canada: A Determinants of Health Approach. The Standing Senate Committee on Social Affairs, Science and Technology Final Report of the Senate Subcommittee on Population Health.
<http://www.parl.gc.ca/40/2/parlbus/combus/senate/Com-e/popu-e/rep-e/rephealthjun09-e.pdf>

⁸² BC Stats: Socioeconomic Indices for Local Health Area.
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸³ BC Stats: Socioeconomic Indices for Local Health Areas: Overall Socio-economic Index
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸⁴ BC Stats: Socioeconomic Indices for Local Health Areas: Index of Economic Hardship
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸⁵ BC Stats: Socioeconomic Indices for Local Health Areas: Index of Crime
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸⁶ BC Stats: Socioeconomic Indices for Local Health Areas: Index of Education Concerns
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸⁷ BC Stats: Socioeconomic Indices for Local Health Areas: Index of Children at Risk
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸⁸ BC Stats: Socioeconomic Indices for Local Health Areas: Index of Youth at Risk
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁸⁹ BC Stats: Socioeconomic Indices for Local Health Areas: Index of Health Problems
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁹⁰ BC Stats: Socioeconomic Indices for Local Health Areas
http://www.bcstats.gov.bc.ca/data/sep/i_lha/data/data.asp

⁹¹ The Cost of Acute Care Hospital Stays by Medical Condition in Canada: 2004 – 2005. Canadian Institute for Health Information. <http://secure.cihi.ca>

⁹² Fall Prevention. BC Injury Research Prevention Unit. <http://www.injuryresearch.bc.ca>

⁹³ Leading Causes of Injury Deaths and injury Hospitalizations. BC Injury Research Prevention Unit.
<http://www.injuryresearch.bc.ca>

⁹⁴ Injuries, Hospitalized Days and Direct Care Costs, by age group and sex: 2008-09. Data acquired through the BC Injury Research Prevention Unit (BCIRPU): Online-tool. Prepared by: J. Haggerstone, Northern Health: July 2010. <http://www.injuryresearch.bc.ca/categorypages.aspx?catid=10&catname=Online%20Data%20Tool>

⁹⁵ Injuries, Hospitalized Days and Direct Care Costs, by age group and sex: 2008-09. Data acquired through the BC Injury Research Prevention Unit (BCIRPU): Online-tool. Prepared by: J. Haggerstone, Northern Health: July 2010. <http://www.injuryresearch.bc.ca/categorypages.aspx?catid=10&catname=Online%20Data%20Tool>

⁹⁶ Northern Region: Accidental Workplace Deaths 2005 - 2010 YTD. BC Coroners Service; Ministry of Public Safety and Solicitor General. Special request for Northern Health. November 16, 2010.

⁹⁷ Northern Region: Accidental Workplace Deaths 2005 - 2010 YTD. BC Coroners Service; Ministry of Public Safety and Solicitor General. Special request for Northern Health. November 16, 2010.

⁹⁸ 24 Hour Roadside suspensions in North Central BC: 2007 - 2009. ICBC, Business Information Warehouse. Special request for Northern Health: Project # 2010RDSO245-0. January 2010.

⁹⁹ BC Coroners Service: Northern Region Motor Vehicle Incident Fatalities: 1997 - 2009; Special update for Northern Health provided by Mr. Mike Green, BC Coroner North Region. March 2010.

¹⁰⁰ Province of British Columbia: BC Ministry of Health Services: Tobacco-Free. <http://www.health.gov.bc.ca/tobacco/>

¹⁰¹ Tobacco Retailer Violation Report; April 1, 2008 - March 31, 2009. Prepared by Northern Health Public Health Protection; Report No: 0605. October 08, 2009.

¹⁰² Tobacco Retailer Violation Report; April 1, 2008 - March 31, 2009. Prepared by Northern Health Public Health Protection; Report No: 0605. October 08, 2009.

¹⁰³ HIV, Hepatitis and Injection Drug Use in British Columbia. Pay Now or Pay Later. 1998 <http://www.health.gov.bc.ca/library/publications/year/1998/paynow.pdf>

¹⁰⁴ The Health of Canada's Communities: Statistics Canada; Supplement to Health Reports, volume 13, 2002 Statistics Canada, Catalogue 82-003 [82-003-s/2002001/pdf/82-003-s2002002-eng.pdf](http://www.statcan.gc.ca/pub/82-003-s/2002001/pdf/82-003-s2002002-eng.pdf)

¹⁰⁵ The Cost of Chronic Disease in Canada: GPI Atlantic: 2004 <http://gpiatlantic.org/pdf/health/chroniccanada.pdf>

¹⁰⁶ The Cost of Smoking in British Columbia and the Economics of Tobacco Control: GPI Atlantic: 2004 <http://gpiatlantic.org/pdf/health/tobacco/costoftobacco-bc.pdf>

¹⁰⁷ A Public Health Approach to Drug Control in Canada: Health Officers Council of British Columbia; 2005. Published by Canadian Foundation for Drug Reform: <http://www.cfdp.ca/bchoc.pdf>

¹⁰⁸ Priorities for Action in Managing the Epidemics: HIV/AIDS in B.C. Progress Report 2007. http://www.health.gov.bc.ca/library/publications/annualrpts/pfa/2007_Progress_Report.pdf

¹⁰⁹ Regulation of Psychoactive Substances in Canada: Seeking a Coherent Public Health Approach: Health Officers Council of British Columbia: 2008. Published by Canadian Foundation for Drug Reform: <http://www.cfdp.ca/bchoc07.pdf>

¹¹⁰ Public Health Approach to Alcohol Policy: An Updated Report from the Provincial Health Officer, 2008. <http://www.health.gov.bc.ca/library/publications/year/2008/alcoholpolicyreview.pdf>

¹¹¹ Preliminary Findings and Final Report: I-track Behavioral Study of Intravenous Drug Users in Prince George: 2008 Available through Northern Health: Community Health Information Portal <http://chip.northernhealth.ca/>

¹¹² The Crisis in Chronic Disease among Aboriginal Peoples: 2009. Centre for Aboriginal Health Research. <http://www.cahr.uvic.ca/docs/ChronicDisease%20Final.pdf>

¹¹³ Fetal Alcohol Spectrum Disorder: Building on Strengths: A Provincial Plan for British Columbia 2008 - 2018 http://www.mcf.gov.bc.ca/fasd/pdf/FASD_TenYearPlan_WEB.pdf

¹¹⁴ Province of British Columbia: BC Ministry of Health Services: Tobacco-Free. <http://www.health.gov.bc.ca/tobacco/>

¹¹⁵ Substance Use in Fatal Motor Vehicle Incidents in Northern BC: Northern Region Motor Vehicle Incidents. Fatalities 1997 - 2009. BC Coroners Service: Special update for Northern Health. March 2010.

¹¹⁶ Healthy Minds, Healthy People; A Ten-Year Plan to Address Mental Health and Substance Use in British Columbia/ http://www.health.gov.bc.ca/library/publications/year/2010/healthy_minds_healthy_people.pdf

¹¹⁷ Centre for Addictions Research in BC. Alcohol and Other Drug Monitoring Project: Mortality and Morbidity, Methodology: <http://carbc.ca/AODMonitoring/ResearchComponents/MortalityMorbidity.aspx>

¹¹⁸ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹¹⁹ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²⁰ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²¹ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²² Number of Deaths Attributable to Alcohol, Tobacco, and Illicit Drugs for BC and Health Authorities, 2001-2006. BC Centre for Addictions Research: AOD Monitoring Project: www.AODmonitoring.ca

¹²³ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²⁴ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²⁵ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²⁶ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²⁷ Number of Deaths Attributable to Alcohol, Tobacco, and Illicit Drugs for BC and Health Authorities, 2001-2006. BC Centre for Addictions Research: AOD Monitoring Project: www.AODmonitoring.ca

¹²⁸ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹²⁹ Number of Deaths Attributable to Alcohol, Tobacco, and Illicit Drugs for BC and Health Authorities, 2001-2006. BC Centre for Addictions Research: Alcohol and Other Drug Monitoring Project: www.AODmonitoring.ca

¹³⁰ Hospitalizations: Counts and Rates Attributable to Alcohol, Tobacco, and Illicit Drugs for BC Local Health Areas. Special update for Northern Health by CARBC: AOD Monitoring Project: March 2010. www.AODmonitoring.ca

¹³¹ Number of Deaths Attributable to Alcohol, Tobacco, and Illicit Drugs for BC and Health Authorities, 2001-2006. BC Centre for Addictions Research: AOD Monitoring Project: www.AODmonitoring.ca

¹³² Indicators of Well-being: Health and Obesity. Human Resources and Skills Development Canada <http://www4.hrsdc.gc.ca/3ndic.1t.4r@-eng.jsp?id=6>

¹³³ The Cost of Obesity in British Columbia: Executive Summary. GPI Atlantic 2004 <http://www.gpiatlantic.org/pdf/health/obesity/bc-obesity.pdf>

¹³⁴ The Cost of Physical Inactivity in British Columbia: Executive Summary. GPI Atlantic, 2004 <http://www.gpiatlantic.org/pdf/health/inactivity-bc.pdf>

¹³⁵ The Cost of Chronic Disease in Canada: GPI Atlantic: 2004 <http://gpiatlantic.org/pdf/health/chroniccanada.pdf>

¹³⁶ Canadian Community Health Survey: Body Mass Index for persons ages 18 +. Acquired through Statistics Canada, December 2010. Note: Due to data variation concerns we used the CANSIM two-year data table 105-0502. <http://cansim2.statcan.gc.ca>

¹³⁷ Dieticians of Canada. <http://www.dietitians.ca/Your-Health/Nutrition-A-Z/Body-Mass-Index.aspx?categoryID=6>

¹³⁸ Reducing the Risk of Diabetes: Body Mass Index. Public Health Agency of Canada. <http://www.phac-aspc.gc.ca/cd-mc/diabetes-diabete/risk-risques-eng.php>

¹³⁹ Kisseebah AH, Krakower GR. Regional Adiposity and Morbidity. *Physiol Rev* 1994;74:761-811. as cited in " Health Canada's new guidelines for body weight classification in adults: challenges and concerns" in the Canadian Medical Association Journal CMAJ • November 23, 2004; 171 (11). <http://www.cmaj.ca/cgi/content/full/171/11/1361>

¹⁴⁰ Reducing the Risk of Diabetes: Body Mass Index. Public Health Agency of Canada. <http://www.phac-aspc.gc.ca/cd-mc/diabetes-diabete/risk-risques-eng.php>

¹⁴¹ Canadian Community Health Survey: Body Mass Index for persons ages 18 +. Acquired through Statistics Canada, December 2010. Note: Due to data variation concerns we used the CANSIM two-year data table 105-0502. <http://cansim2.statcan.gc.ca>

¹⁴² Select Standing Committee on Health. A Strategy for Combating Childhood Obesity and Physical Inactivity in British Columbia. Appendix B: The Cost of Obesity and Inactivity: A Review of Alternative Estimates. British Columbia Medical Association Estimates, 2nd Session, 38th Parliament, November 29, 2006. <http://www.leg.bc.ca/cmt/38thparl/session-2/health/reports/Rpt-Health-38-2-29Nov2006/Rpt-Health-38-2-29Nov2006-AppendixB.htm>

¹⁴³ BC Vital Statistics Annual Report 2003 - 2007: Appendices 1 & 3 for all table entries except TFR. <http://www.vs.gov.bc.ca/stats/annual/index.html>

¹⁴⁴ BC Stats: Components of Growth for P.E.O.P.L.E. 34. Total Fertility Rates by LHA: 2010. Available by subscription: www.bcstats.gov.bc.ca

¹⁴⁵ BC Provincial Health Officers Annual Report 1999. Appendix C: Indicator Definitions

<http://www.hls.gov.bc.ca/pho/reports/>

¹⁴⁶ Technical Assumptions for Population Forecasting in BC: Page 8. BC Stats, July 2009.
<http://www.bcstats.gov.bc.ca/data/pop/popproj.asp>

¹⁴⁷ World Health Organization, Pacific Region: Australia - Health Situation and Trends Report
http://www.wpro.who.int/countries/2008/aus/health_situation.htm

¹⁴⁸ Immunization: A Report on the Health and Wellbeing of British Columbian. BC Provincial Health Officer, 1998.
<http://www.health.gov.bc.ca/pho/pdf/phoannual1998.pdf>

¹⁴⁹ Technical Assumptions for Population Forecasting in BC: Page 4. BC Stats, July 2009.
<http://www.bcstats.gov.bc.ca/data/pop/popproj.asp>

¹⁵⁰ BC Provincial Health Officers Annual Report 1999. Appendix C: Indicator Definitions
<http://www.hls.gov.bc.ca/pho/reports/>

¹⁵¹ BC Vital Statistics Annual Report 2003 - 2007: Glossary
<http://www.vs.gov.bc.ca/stats/annual/index.html>

¹⁵² Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 - March 31, 2009. Prepared for Northern Health by the BC Perinatal Health Program, September 28, 2010. Request No. 2010-040

¹⁵³ Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 - March 31, 2009. Prepared for Northern Health by the BC Perinatal Health Program, September 28, 2010. Request No. 2010-040.

¹⁵⁴ BC Provincial Health Officers Annual Report 1999. Appendix C: Indicator Definitions
<http://www.hls.gov.bc.ca/pho/annual.html>

¹⁵⁵ Infant Macrosomia among First Nations in British Columbia: Prevalence, Trends and Characteristics. BC Vital Statistics Agency: http://www.vs.gov.bc.ca/stats/indian/infant_macrosomia.html

¹⁵⁶ BC Provincial Health Officers Annual Report 1999. Appendix C: Indicator Definitions
<http://www.hls.gov.bc.ca/pho/annual.html>

¹⁵⁷ Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 - March 31, 2009. Prepared for Northern Health by the BC Perinatal Health Program, September 28, 2010. Request No. 2010-040.

¹⁵⁸ Pollack et al. as cited in BC Perinatal Database Program Annual Report 2007. Refer to page 14.
<http://www.bcpdh.ca/Annual%20Report.htm>

¹⁵⁹ Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2004 - March 31, 2009. Prepared for Northern Health by the BC Perinatal Health Program, September 28, 2010. Request No. 2010-040.

¹⁶⁰ Northern Health Resident Mothers that Delivered a Baby in British Columbia, by Resident Municipality, April 01, 2004- March 31, 2009. Prepared for Northern Health by BC Perinatal Health Program. September 27, 2010. Request No. 2010-040. Update to 2008078 and 2009018.

¹⁶¹ BC Vital Statistics Annual Report 2003 - 2007: Appendix 3. <http://www.vs.gov.bc.ca/stats/annual/index.html>

¹⁶² BC Vital Statistics Annual Report 2003 - 2007: Appendix 3. <http://www.vs.gov.bc.ca/stats/annual/index.html>

¹⁶³ Population Patterns of Chronic Health Conditions in Canada: Health Council of Canada.
<http://healthcouncilcanada.ca>

¹⁶⁴ The Cost of Chronic Disease in Canada: GPI Atlantic. 2004.
<http://www.gpiatlantic.org/pdf/health/chroniccanada.pdf>

¹⁶⁵ The Cost of Obesity in British Columbia: Executive Summary. GPI Atlantic 2004
<http://www.gpiatlantic.org/pdf/health/obesity/bc-obesity.pdf>

¹⁶⁶ The Cost of Physical Inactivity in British Columbia: Executive Summary. GPI Atlantic, 2004
<http://www.gpiatlantic.org/pdf/health/inactivity-bc.pdf>

¹⁶⁷ Indicators of Well-being: Health and Obesity. Human Resources and Skills Development Canada
<http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=6>

¹⁶⁸ Prevention: British Columbia Cancer Agency. 2009. <http://www.bccancer.bc.ca/PPI/Prevention/default.htm>

¹⁶⁹ Northern Cancer Control Strategy: Final Report. 2005. This report is available through [Northern Health](#).

¹⁷⁰ Why Health Care Renewal Matters: Lessons from Diabetes. Health Council of Canada. .
<http://healthcouncilcanada.ca>

¹⁷¹ Primary Health Care Charter: a collaborative approach. British Columbia Ministry of Health: 2007.
http://www.primaryhealthcarebc.ca/library/publications/year/2007/phc_charter.pdf

¹⁷² Clinical Practice Guidelines and Protocols in British Columbia: BC Ministry of Health Services. May 2010.
<http://www.bcqguidelines.ca/qpac/index.html>

¹⁷³ Prevention: British Columbia Cancer Agency. 2009. <http://www.bccancer.bc.ca/PPI/Prevention/default.htm>

¹⁷⁴ Screening: British Columbia Cancer Agency. 2009. <http://www.bccancer.bc.ca/PPI/Screening/default.htm>

¹⁷⁵ Healthy Minds, Healthy People; A Ten-Year Plan to Address Mental Health and Substance Use in British Columbia/ http://www.health.gov.bc.ca/library/publications/year/2010/healthy_minds_healthy_people.pdf

¹⁷⁶ Chronic Disease Tables for British Columbia: Health System Planning Division (HSPD), BC Ministry of Health Services project No. 2009_ 305PHC: Updated February 9, 2010.

¹⁷⁷ Population Patterns of Chronic Health Conditions in Canada: Health Council of Canada. <http://healthcouncilcanada.ca>

¹⁷⁸ The Cost of Chronic Disease in Canada: GPI Atlantic. 2004. <http://www.gpiatlantic.org/pdf/health/chroniccanada.pdf>

¹⁷⁹ The Cost of Obesity in British Columbia: Executive Summary. GPI Atlantic 2004 <http://www.gpiatlantic.org/pdf/health/obesity/bc-obesity.pdf>

¹⁸⁰ The Cost of Physical Inactivity in British Columbia: Executive Summary. GPI Atlantic, 2004 <http://www.gpiatlantic.org/pdf/health/inactivity-bc.pdf>

¹⁸¹ Indicators of Well-being: Health and Obesity. Human Resources and Skills Development Canada <http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?id=6>

¹⁸² Prevention: British Columbia Cancer Agency. 2009. <http://www.bccancer.bc.ca/PPI/Prevention/default.htm>

¹⁸³ Northern Cancer Control Strategy: Final Report. 2005. This report is available through [Northern Health](#).

¹⁸⁴ Why Health Care Renewal Matters: Lessons from Diabetes. Health Council of Canada. . <http://healthcouncilcanada.ca>

¹⁸⁵ Primary Health Care Charter: a collaborative approach. British Columbia Ministry of Health: 2007. http://www.primaryhealthcarebc.ca/library/publications/year/2007/phc_charter.pdf

¹⁸⁶ Clinical Practice Guidelines and Protocols in British Columbia: BC Ministry of Health Services. May 2010. <http://www.bcguidelines.ca/gpac/index.html>

¹⁸⁷ Prevention: British Columbia Cancer Agency. 2009. <http://www.bccancer.bc.ca/PPI/Prevention/default.htm>

¹⁸⁸ Screening: British Columbia Cancer Agency. 2009. <http://www.bccancer.bc.ca/PPI/Screening/default.htm>

¹⁸⁹ Healthy Minds, Healthy People; A Ten-Year Plan to Address Mental Health and Substance Use in British Columbia/ http://www.health.gov.bc.ca/library/publications/year/2010/healthy_minds_healthy_people.pdf

¹⁹⁰ Projections (Incidence and Mortality) for 2009 - 2023 by Local Health Areas: BC Cancer Agency. April 2009. <http://www.bccancer.bc.ca/HPI/CancerStatistics/FF/projectedstats.htm>

¹⁹¹ Northern BC Cancer Prevalence Projections: BC Cancer Agency. Special Request for Northern Health; 2009-10-02.

¹⁹² Northern BC Cancer Prevalence Projections: BC Cancer Agency. Special Request for Northern Health; 2009-10-02.

¹⁹³ BC Cancer Agency: Regional Cancer Statistics 2007. <http://www.bccancer.bc.ca>

¹⁹⁴ BC Cancer Agency: Regional Cancer Statistics 2007. <http://www.bccancer.bc.ca>

¹⁹⁵ BC Cancer Agency: Regional Cancer Statistics 2007. <http://www.bccancer.bc.ca>

¹⁹⁶ Healthy Eating Active Living in Northern British Columbia <http://www.healbc.ca/>

¹⁹⁷ Excerpt from material prepared by NH Population Health for NH Annual Report: Summer 2010.

¹⁹⁸ Excerpt from material prepared by NH Population Health for NH Annual Report: Summer 2010.

¹⁹⁹ Excerpt from material prepared by NH Population Health for NH Annual Report: Summer 2010.

²⁰⁰ Prepared for Northern Health by Northern Health Public Health Protection; June 2010.

²⁰¹ Prepared for Northern Health by Northern Health Public Health Protection; June 2010.

²⁰² Prepared for Northern Health by Northern Health Public Health Protection; June 2010.

²⁰³ Prepared for Northern Health by Northern Health Public Health Protection; June 2010.

²⁰⁴ Immunization: A Report on the Health and Wellbeing of British Columbian. BC Provincial Health Officer, 1998. <http://www.health.gov.bc.ca/pho/pdf/phoannual1998.pdf>

²⁰⁵ Technical Assumptions for Population Forecasting in BC: Page 7. BC Stats, July 2009. <http://www.bcstats.gov.bc.ca/data/pop/pop/popproj.asp>

²⁰⁶ Vaccine Preventable Disease: Northern Health-Public Health / Preventive Public Health: May 2010.

²⁰⁷ Vaccine Preventable Disease: Northern Health-Public Health / Preventive Public Health: May 2010.

²⁰⁸ Vaccine Preventable Disease: Northern Health-Public Health / Preventive Public Health: May 2010.

²⁰⁹ BC Centre for Diseases Control: Diseases and Conditions, A - Z: Chlamydia overview.
<http://www.bccdc.ca/dis-cond/a-z/default.htm>

²¹⁰ BC Centre for Diseases Control: Diseases and Conditions, A - Z: Chlamydia overview.
<http://www.bccdc.ca/dis-cond/a-z/default.htm>

²¹¹ BCCDC Sexually Transmitted Infection (STI) Cubes. Accessed May 28, 2010

²¹² BCCDC Sexually Transmitted Infection (STI) Cubes: Accessed May 28, 2010.

²¹³ BC Centre for Disease Control: Diseases and Conditions A - Z : Hepatitis C overview.
<http://www.bccdc.ca/dis-cond/a-z/default.htm>

²¹⁴ Healthy Pathways Forward: A Strategic Framework for Viral Hepatitis in British Columbia
<http://www.health.gov.bc.ca/library/publications/year/2007/healthypathwaysforward.pdf>

²¹⁵ Healthy Pathways Forward: A Strategic Framework for Viral Hepatitis in British Columbia
<http://www.health.gov.bc.ca/library/publications/year/2007/healthypathwaysforward.pdf>

²¹⁶ Hepatitis C counts by HSDA and Gender. BCCDC - HCV Cubes: courtesy of Northern Health Public Health / Preventive Public Health: February 2010.

²¹⁷ Hepatitis C counts by HSDA, Community and Gender. BCCDC - HCV Cubes: courtesy of Northern Health Public Health / Preventive Public Health and BCCDC: May 2010.

²¹⁸ BCMoH: Health Ideas Summary Reports: Hospital Services Catchment Patterns. Day Procedure Groups (DPG+): Dental Interventions - no.1300. Patient residence and LHA of Service: 2004/05 - 2008/09. May, 2010.

²¹⁹ Self Sufficiency by Local Health Area: 2008-09. Data is from the Discharge Abstract Database; obtained through Quantum Analyzer, V. 5.01. Prepared by: J. Haggerstone, Northern Health: August 2010.

²²⁰ Hospital Services Catchment Patterns by Hospital: Discharge Abstract Database 2008-09. Acquired through Health Ideas. Prepared by J. Haggerstone: Northern Health: July 2010.

²²¹ Interactive Hospital Atlas, Facility Profiles: Discharge Abstract Database 2008-09. Acquired through Health Ideas. Prepared by J. Haggerstone: Northern Health: July 2010.

²²² Interactive Hospital Atlas, Facility Profiles: Discharge Abstract Database 2008-09. Acquired through Health Ideas. Prepared by J. Haggerstone: Northern Health: July 2010.

²²³ Hospital Workloads for BC Health Authorities: Discharge Abstract Database 2008 -2009. Acquired through Health Ideas. Summary Reports. Prepared by J. Haggerstone: Northern Health: May 2010.

²²⁴ Hospital Workloads for BC Health Authorities: Discharge Abstract Database 2008 -2009. Acquired through Health Ideas. Summary Reports. Prepared by J. Haggerstone: Northern Health: May 2010.

²²⁵ Hospital Services Catchment Patterns by Hospital: Discharge Abstract Database 2008-09. Acquired through Health Ideas. Prepared by J. Haggerstone: Northern Health: July 2010.

²²⁶ Interactive Hospital Atlas, Facility Profiles: Discharge Abstract Database 2008-09. Acquired through Health Ideas Prepared by J. Haggerstone: Northern Health: July 2010.

²²⁷ Hospital Workloads for BC Health Authorities: Discharge Abstract Database 2008 -2009. Acquired through Health Ideas Summary Reports. Prepared by J. Haggerstone: Northern Health: May 2010.

²²⁸ Facility Workloads: Northern Health, Executive Summary Report # 2010-02. May 2009.

²²⁹ Facility Workloads: Northern Health, Executive Summary Report # 2010-02. May 2009.

²³⁰ Facility Workloads: Northern Health, Executive Summary Report # 2010-02. May 2009.

²³¹ Preventable Admissions (2008 - 09): NH Quantum Analyzer. J. Haggerstone, Northern Health, March 2010.

²³² Preventable Admissions (2008 - 09): NH Quantum Analyzer. J. Haggerstone, Northern Health, March 2010.

²³³ BC Museum of Anthropology <http://www.ainc-inac.gc.ca/ai/scr/bc/fnbc/mps/fnmp-eng.pdf>

²³⁴ First Peoples' Language Map of British Columbia. <http://maps.fphlcc.ca>

²³⁵ First Peoples' Language Map of British Columbia. <http://maps.fphlcc.ca>

²³⁶ First Peoples' Language Map of British Columbia. <http://maps.fphlcc.ca>

²³⁷ Northern Facility Activity Summaries were compiled from Northern Health Finance: Executive Summary Reports. These tables are a selected extract. Prepared, August 2010.